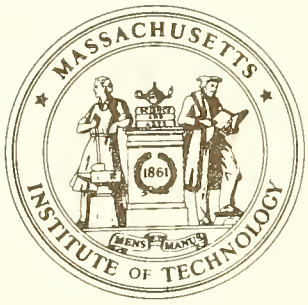

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A MARXIAN TYPE MODEL OF ENCLOSURES*

Jon S. Cohen
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Number 118 September 1973

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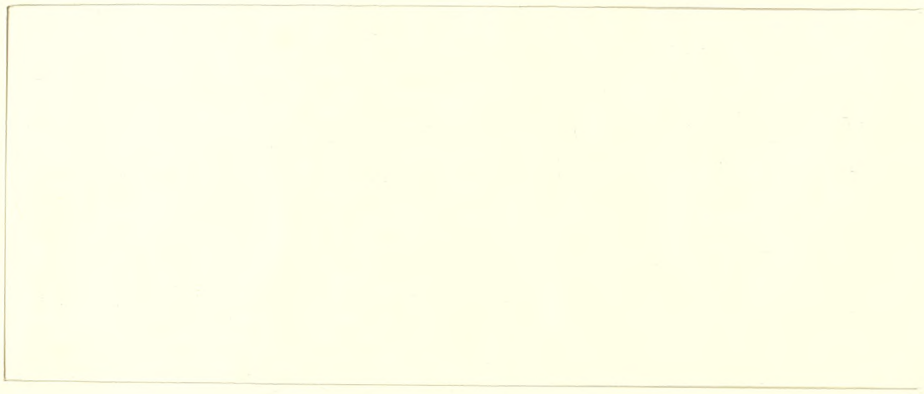

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INTRODUCTION

Enclosing of land in England altered economic and social life in a fundamental way. It facilitated the transition from communal to private regulation of property and in consequence transformed the basis of the rural economy. By the time it was completed, land and labor had emerged as full fledged economic commodities. Production and distribution, once so tightly bound up with considerations of rank, responsibility, and fealty, came to be guided by strict calculations of profit and loss. The transition was painful for a majority of the rural community and they resisted it - sometimes with violence, almost always without success. From the beginning enclosures provided opponents of the movement as well as supporters with inexhaustible topics for controversy. These same controversial issues have raised a number of very important questions for economic historians.

Did enclosures increase economic efficiency and raise national income? At the same time did they contribute to immiserization of the working population? When land was enclosed, did it result in less labor intensive production and lead to depopulation? Were rents simultaneously pushed up? Did enclosures stimulate the cultivation of new lands, the growth of industry, the transfer of labor out of agriculture?

Conspicuously absent from the economic history literature is a coherent framework for analyzing the economic effects of enclosures. The explicit model developed in this paper will provide such a framework. We are fully aware of the legitimate objections that can be raised against the use of a model to deal with so complex a historical phenomenon as

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enclosure. For example, it is obvious that no model can possibly account for all the regional variations in cultural heritage, vicinity to markets, receptiveness to new ideas, and the like which play such a major role in most descriptive analyses of English agrarian history.[1] Our intention, however, is not to offer another detailed description of enclosures. Rather, we intend to focus sharply on those basic economic features which underlay the whole movement. For this purpose, the model building approach is the appropriate one. What we sacrifice in descriptive accuracy we gain in analytical insight and rigor. We will be able to formulate precisely the economic questions posed in the preceding paragraph and to give definite, affirmative answers to each of them.

Although our approach departs from standard methods of analysis in economic history, our conception of medieval society as a world ruled by custom and dominated by notions of common property resembles closely that of such classical writers as Vinogradoff, Maitland, Pirenne and Bloch.[2] Similarly, our position on the enclosure movement has much in common with that of Tawney, Thorold Rogers, Mantoux and others who perceived that its essence lay in a struggle over property rights.[3] Our model, however, is probably closer in spirit to Marx's analysis of "so-called primitive accumulation." It seems to us that if Marx's basic ideas about enclosures were to be recast using modern methods of economic analysis, the outcome would have to be very close to the model presented in this paper.[4] It is in this sense that we label ours a Marxian type model of enclosures.

It is useful to state explicitly what we regard as the essence of Marx's argument, since his interpretation of enclosures is both controversial and frequently misunderstood.[5] Marx emphasized more than any other writer

the dual nature of enclosures. For him they were both a source of progress and a mainspring of social conflict. In his analysis, enclosures resulted from a class struggle in which landlords expelled peasants from their traditional holdings and claimed the agricultural surplus. This surplus served as a primary source of primitive capital accumulation and formed a basis for the capitalist mode of production. In Capital, Marx was concerned with discovering the "laws of capitalist development," a process which could only be understood historically. Thus he was prompted to speculate on the essential economic features of "feudalism," which he regarded as the precursor of "capitalism." As Marx saw it, prior to enclosures property rights were loosely defined and land use was more or less regulated by the peasant community. Although the peasants were usually obliged to pay a customary rent, it was of subsidiary interest to the "feudal" lord compared with the number of men he was able to control by holding land. Marx was thus in a position to stress how the rise of a capitalist mentality altered the nature of economic relations. Taking England as the "classical" example, he argued that the English landlord more and more came to view land primarily as a source of income and men as potential wage laborers. The mechanism for this transition was enclosure. It gave landlords legal rights to the land and the power to extract a greater surplus from it. Income maximizing capitalist rent replaced traditional "feudal" dues. Simultaneously, enclosure meant to the peasant that he was divorced from his traditional means of production, swept off the land, and was "free" to enter the labor market at a lower standard of living. In the Marxian framework, enclosures were progressive because they gave rise to the new, more efficient capitalist mode of production and led (through the creation of a wage labor force) to the rise of an

industrial proletariat. At the same time, their immediate impact on the English working population was shattering.

As the conventional wisdom has it, Marx's analysis is by and large wrong or irrelevant. Many economic historians have sought alternative explanations of enclosures and their economic consequences. Demographic growth has replaced the profit seeking landlord as a destabilizing factor. Technological change is now held responsible for the progress of enclosures and impersonal forces of the market have pushed out class conflict as the catalyst for changes in the system of production. To some modern scholars, the medieval lord was no less a profit maximizer than the nineteenth century commercial farmer, and changes in relative prices then, as now, were the prime determinant of a landlord's behavior.

There is no question that modern scholarship has made substantial contributions to our understanding of the enclosure movement. It has shown, for example, the inaccuracy of the Hammonds' contention that parliamentary enclosures were nothing more than open swindle of the small landowners by the gentry.[6] It has raised serious doubts about the direct connection between enclosures and the creation of an industrial proletariat. It has dispelled the frequently implicit but always visible idealization of pre-commercial conditions in the English countryside which colored so much of the earlier literature. It has provided valuable new information on various other aspects of agrarian change in England. But in our opinion, the literature has not yet provided an acceptable alternative to a properly specified Marxian type model. As this paper will attempt to demonstrate, the Marxian analysis of enclosures can be given an interpretation that is more reasonable, logically consistent, and empirically sound than is commonly acknowledged.

The next two sections of the paper prepare the foundations for our economic model. The first of these highlights some distinctive features of the medieval English rural economy. There is a fundamental economic question about this society which has gone unasked. What is the appropriate principle for describing, to a tolerably serviceable first approximation, who gets what and how people were distributed on the land? The next section's selective survey of the medieval economy is in large part designed to provide the elements of an answer.

Any analytical treatment of the enclosure movement naturally requires an explicit economic definition of an enclosure. Such a definition is provided in the third section. Without this kind of statement it is impossible to distinguish between basic and superficial aspects of the movement.

On the basis of our view of medieval rural society and of enclosures, we attempt in the fourth and fifth sections to establish a plausible economic framework for analyzing the transition from communal to private regulation of property. Although highly abstract, our model captures the essence of this transition and makes it possible to examine enclosures in a coherent fashion.

The value of any theory depends in large part on the strength of its predictions. In this instance it is impossible to employ any of the standard statistical tests of accuracy because we lack the necessary data. Our approach is instead to examine in terms of our model much of the literature on the causes and the consequences of enclosures. This is the principal subject matter of the sixth section. While the present paper concentrates on the enclosure movement in England, our model is really of an abstract character. It can just as well be used to analyze certain aspects of the

transition from "traditional" to "modern" agriculture in the general context of economic development. This theme is briefly touched upon in the final part of section six.

2

THE MEDIEVAL ECONOMY: A STYLIZED DESCRIPTION

We want to describe in economic terms the allocation of labor on land in the open field regions of England between about the beginning of the 12th to the middle of the 15th century. Any attempt to dissemble the difficulties inherent in this task would be tedious, unwise and misleading. To anyone familiar with modern research on medieval economic history the most striking feature of the period was the complexity of organizational forms and economic relations which typified the rural economy. "There is no heresy about the Middle Ages quite so pernicious as the theory that they were unchanging."[7] The manorial system was widespread but hardly pervasive. Kent, Cornwall, and Devon among other areas were farmed for the most part in severalty, at least by the end of the 12th century. Social and economic differentiation among the peasantry did not conform to the legal distinctions between freemen and villeins. In some communities it was as common to find villeins who were men of substance and freemen who were poor small-holders as it was to find the reverse.[8] The 12th, 13th, 14th, and 15th centuries were each differentiable in terms of economic opportunities and economic behavior.[9]

While it is important to recognize that medieval society sustained a great variety of economic forms and patterns of behavior, it would be a mistake to overlook those features which stand out as remarkably immutable over time and between regions. One of these was the extent to which custom

or tradition, rather than the market, regulated economic activity. Economic bonds among classes and individuals no less than spiritual or military ties were sealed by tradition:

> Traditionalists to the core, medieval men could be said with slight (very slight) exaggeration to have ordered their lives on the assumption that the only title to permanence was that conferred by long usage. Life was ruled by tradition, by group custom.[10]

Why this was so need not concern us except to note that both lord and peasant accepted the role of custom because it served each one's individual purpose. The lord was guaranteed a work force, an army, and an income from his land. For the peasant, relying on custom was at least preferable to the lord acting as sole arbiter[11] and was in fact the only defense a peasant had against the superior economic, political, and military strength of a lord.[12]

Three inferences can be drawn from this pervasive feature of medieval society. First, the system was slow to accept changes which challenged custom. Second, as with all such tradition bound societies, organizations whose sole tasks were those of production or distribution did not exist.[13] In consequence it was unlikely that the market, relative prices, and monetary profit and loss calculations would dictate relations among individuals or that they would determine economic behavior. Instead, and this is the third point, complex sets of obligations governed the social, economic, and political relations between lord, vassal, freeman, and serf. They were established by tradition and maintained by common assent.[14]

Rent in the sense of a payment in money or in kind for the use of land was only a small part of the specific obligations which determined tenurial relations between a medieval lord and his peasants.[15] The villein, and

frequently the freeman as well, was expected to work the fields of the demesne during part of the year.[16] He was obliged to grind his grain at the lord's mill and bake his bread in the lord's ovens for a fee.[17] He made inheritance and marriage payments to the lord, was subject to entry fines, paid a head tax and was liable for military service in the lord's army. In addition, most peasants were obliged to join a tithing and to appear at sessions of the manorial court.[18] The flow of obligations was not unidirectional; a lord was expected to provide certain goods and services for his tenants. For example, when a villein paid his yearly rent, the lord was obliged to invite him to his table.[19] Meals were provided for laborers on boon days and on most occasions lords had to repay labor services with agricultural goods.[20] These obligations affected every aspect of life on a medieval manor. They determined a peasant's legal status and life-style and they established a lord's economic and social position and his remuneration from the land.

It is all too easy for a modern economist to view these obligations as components of economic rent and to see a profit maximizing landowner in the manorial lord. From our point of view such an interpretation would be forced.[21] The medieval world was a society steeped in tradition, not a market economy in disguise. The preconditions that would have made profit maximization even a feasible objective were not evident. Other considerations which affect land use were not subservient to the profit motive. Institutions were not designed to enforce contractual obligations. Factor markets were for the most part nonexistent. Although these features were not totally absent in medieval society, they cannot be regarded as the main determinants of economic activity.[22] Even if we were to assume

that the manorial lord was the proverbial greedy, covetous, and profit oriented English landowner of later centuries, custom, inertia, and passive and active resistance by the peasantry would have combined to prevent him from capturing the full surplus value of peasant cultivation.[23] But the medieval lord was fundamentally different from his later counterpart. For him land was primarily a means for obtaining loyalty, esteem, military aid, and power rather than merely a source of income. As late as the 18th century

> Many old-established landlords only valued their estates once a generation and were not prepared to increase rents simply because there were high grain prices. In fact, 'they estimate their reputation and character too high to allow them to squeeze and suppress those whom providence has placed below them.'[24]

A lord's economic and political position depended more on the men he controlled than the rent he collected. Marc Bloch's observation for medieval France is that:

> Nothing could be more misleading than to dwell exclusively on the economic aspects of the relationship between a lord and his men, however important they may seem. For the lord was not merely director of an undertaking; he was also a leader. He had power of command over his tenants, levied his armies from them as occasion demanded, and in return gave them his protection....Many a Frankish king or French baron if asked what his land brought him would have answered like the Highlander who said 'five hundred men.'[25]

Although it may not be an exaggeration to say that regular markets existed for some goods, it would be incorrect to argue on the basis of occasional transactions that this was the case for land and labor.[26] Even in Tudor times rural England remained an overwhelmingly peasant society where hired labor was only occasionally employed at peak periods.[27] Some leasing of land and outright transfers did occur in medieval England, but these transactions did not constitute a land market in the modern sense.[28]

The reluctance of both peasants and lords to sell land and the difficulties attached to such sales are persuasive evidence that land had a special status outside the market place.

Indeed, the whole concept of land "ownership" was alien to medieval society and the word does not appear in contemporary legal documents.[29] Feudal tenure gave both a tenant and his lord rights vested "in the land" itself.[30] According to medieval law, a given piece of land was held by one member in the feudal hierarchy of a superior member. The progression of overlapping claims continued until the land was ultimately held of the Crown itself. No one had the exclusive rights of land usage which we associate with true private property in the modern sense.[31] As R. B. Smith states:

> The kind of control over land most familiar to modern minds is one in which estates, of varying sizes, are owned by individuals, family trusts or corporations, each estate yielding a money income to its owners. Such a situation existed in England by the second half of the 17th century....But not all societies have been dominated by those concepts, and even in the England of Henry VIII they were not clearly established as the only way of thinking about men's relationship to the land....If we go back to the 12th century....[the] dominant concepts were not ownership and incomes, rents and profits, but lordship, tenure, and service.[32]

This sort of control did not confer on a lord the legal right to expel peasants from their customary holdings nor did it permit him to alter unilaterally either the obligations due him, or those he owed his tenants. Custom sood as a solid barrier to any arbitrary alterations in the use of property.[33] If the lord wished to change drastically the conditions of tenure, he had to challenge directly the rule of tradition.[34] Within the medieval context, this was not to be done lightly.

In essence, then, we see the medieval economy as a custom based or non-market system. What is the appropriate model of such a system? It is important to answer this question, even though the answer may have to come at an almost cosmic level of abstraction. What we want is some quantifiable principle which would describe how the population was distributed on the land. If we were dealing with a market economy, we would probably use the principle of equalized marginal products (quite an abstraction in its own right!). However, everything we said about the medieval rural economy suggests that marginalism is not the appropriate principle for this case. But then what is? Many would say there is no analogous principle for the medieval economy. What exactly does this mean? If there is literally no way of describing how the population is spread on the land, the relevant abstraction must be that it is randomly distributed. The most straightforward interpretation of "randomness" in this context is that people are scattered on the land somewhat like darts thrown casually onto a map. However, it seems reasonable to expect to find a lower population density on mountain tops than in fertile valleys. When we want to think in terms of a randomly distributed agricultural population, it makes more sense to have people uniformly distributed across plots of land if each plot is measured in terms of yield instead of by area. The very idea that there is no principle of distribution seems to be pushing us towards the conclusion that there is some crude tendency for average products to be equalized.

Does this really seem plausible as an abstraction of the medieval rural economy? Or are the deviations so significant that it is actually an inappropriate abstraction - either because it is no better than some other quantifiable principle or because there is just so much noise in the system

that any principle is irrelevant? We will argue that although it was only observed as a tendency and never as an exact law, the principle of equal average products (as contrasted with the principle of equal marginal products) is the relevant abstraction on which to base a theory of distribution for open field agriculture. There is no way to "prove" this assertion. We will try to show that it is at least not unreasonable, and that if accepted it provides a powerful organizing principle for analyzing a large number of topics in agrarian history. With the former of these aims in mind, we turn now to an examination of certain aspects of the open field system.

In champion England, open field agriculture imposed such a strong spirit of community on the peasantry that to a large extent it overshadowed any sense of private property.[35] "An open field village with its concern for innumerable communal routines, could not be the same as a village of individual inclosed farms."[36] Questions of land usage were not settled by private decisions, but were subject to communal regulation. Many, probably most, of the principal occupations of agriculture were carried out cooperatively. A peasant held strips of land scattered irregularly in great open fields where there were no fences, hedges, ditches, or other permanent barriers. Each villager had customary rights to meadows, commons, and wastes. After the harvest, all the arable fields were thrown open to common use, first for villagers to gather straw and then for animals to graze the stubble.[37] The rules governing crops, crop rotation, the time of planting and harvesting, regulation of the meadows, commons and wastes were framed and enforced by the village community.[38]

For many purposes the community of the village can be regarded as a veritable corporate body.[39] The village as a whole was often compelled to

accept "public responsibility" in matters of taxation, militia, police, criminal liability, and in the construction and maintenance of roads and bridges.[40] A village on occasion voluntarily accepted fresh responsibilities when it appeared in the interest of the community as a whole to do so. For example, it was not uncommon when a lord farmed out his demesne for a village as a whole to take the land. The clearing of new land was generally a cooperative venture with the new tracts divided among the villagers more or less equally.[41]

There is some presumption that an equalitarian spirit must have prevailed among the shareholders of such a system and that in some sense it may have constituted a guiding force.[42] This kind of a theme has been picked up by many scholars,[43] but no one has stated it quite so clearly as Vinogradoff:

> [Open field agriculture] was a system primarily intended for the purpose of equalizing shares, and it considered every man's rights and property as interwoven with other people's rights and property: it was therefore a system particularly adapted to bring home the superior right of the community as a whole, and the inferior, derivative character of individual rights. The most complete inference from such a general conception would be to treat individual occupation of the land as a shifting ownership, to redistribute the land among the members of the community from time to time, according to some system of lot or rotation. The western village community does not go so far, as a rule, in regard to the arable, at least in the time to which our records belong. But even in the west, and particularly in England, traces of shifting ownership, 'shifting severalty', may be found as scattered survivals of a condition which, if not general, was certainly much more widely spread in earlier times. The arable is sometimes treated as meadows constantly are: every householder's lot is only an 'ideal' one, and may be assigned one year in one place, and next year in another. The stubborn existence of intermixed ownership, even as described by feudal and later records, is in itself a strong testimony to the communal character of early

> property....I lay stress on the fact (that) if the open-field system with its intermixture had been merely a reflection of the original allotment, it would have certainly lost its regularity very soon....And still the open-field intermixture holds its ground all through the middle ages, and we find its survivals far into modern times. This can only mean, that even when the shifting, 'ideal' share in the land of the community had given way to the permanent ownership by each member of certain particular scattered strips, this permanent ownership did by no means amount to private property in the Roman or in the modern sense. The communal principle with its equalizing tendency remained still as the efficient force regulating the whole and strong enough to subject even the lord and the freeholders to its customary influence. By saying this I do not mean to maintain, of course, that private property was not existent, that it was not breaking through the communal system, and acting as a dissolvent of it....But the fact remains that the system which prevailed upon the whole during the middle ages appears directly connected in its most important features with ideas of communal ownership and equalized individual rights.[44]

So long as there was at least some peasant mobility, "the communal principle with its equalizing tendency" must have operated to some extent between villages as well as within a village. If a self-seeking peasant were relatively free to move about, naturally, other things equal, he would gravitate towards a place offering a higher standard of living. With even a limited amount of movement, this must have represented a force for regional equality.

It is difficult to form a precise picture of the extent of peasant mobility in the aggregate. However, we do have enough information to be able to say with some confidence that the old image of the medieval villein as an immobile colonus 'bound to the soil' is highly inaccurate.[45] Case studies drawn from available records show a surprising amount of peasant movement.[46] There were even institutions such as the frank-pledge which had as one of its responsibilities the recognition and acceptance of newcomers into the village community.[47]

Since a lord's "men" were his most valuable asset it was generally in his interest to play the benevolent host and attract as many tenants as possible.[48] This was all the more imperative since it was difficult to prevent desertions and almost impossible to secure the return of a truant villein. The medieval aristocracy were a notoriously uncooperative group and the frequency with which conflicts over rights and obligations arose merely exacerbated individual hostilities. In such circumstances, a lord who discovered a new arrival on his estate at the annual (or semi-annual) session of the manorial court was most unlikely to send the truant back to his old village and there was no central authority to compel him to do so.

A newcomer had a variety of ways to gain entrance into a village. The most common method was to marry an inhabitant[49] but other means were available: he could work at odd jobs or as an occasional agricultural laborer, live initially as a squatter and gradually work his way into the local society. We have no evidence that villagers attempted to exclude a newcomer. Although a new arrival was another person with whom to share the pie, he also shared the fiscal, military, and other communal obligations so that his presence entailed benefits as well as costs. There is no way to determine from the meagre records why people moved but we can presume it was at least in part to improve their economic situation.

3.

ENCLOSURES

The enclosure movement slowly but inexorably destroyed the economic basis of the old system with its notions of customary rights and replaced it with a system based on the concept of private property.

For the most part, the aristocracy, landed gentry, and squirearchy were the enclosers, but enterprising peasants and newly landed burghers sometimes joined their ranks.[50] For our purposes, the identity of the encloser is unimportant. We are concerned with the power enclosure gave a landowner to wring from his property the maximum possible profit. The essence of an enclosure was not, as some have intimated, in surveying, fencing, ditching, hedging, or any other physical manipulation of the land. For the purposes of economic analysis, enclosing basically meant converting communally regulated land into private property. Only if land were privately owned could the owner derive a maximum income from it. Engrossing and consolidation, to the extent that they accomplished this conversion, were merely alternative forms of enclosure.

Although land was being enclosed as early as the 12th century and continued in some areas into the 20th century, our main concern is with enclosures which took place from the mid 15th to the mid 18th century. It is reasonable to argue that the slow piecemeal enclosure movement of the late medieval period was of limited importance.[51] As for enclosures after the middle of the 18th century, many of these are probably more appropriately regarded as formal <u>legal</u> sanctions of a <u>fait accompli</u> than as enclosures proper (in the <u>economic</u> sense of converting land use from

primarily communal to primarily private regulation).[52] By the time of the parliamentary enclosures, much of the land that was not legally enclosed had already been consolidated and property rights to it had been more or less well established for some time.[53] The argument is not that the rather extensive parliamentary enclosures were unimportant in their own right, but that their discernible economic impact was mitigated by previous changes which had already begun to alter conditions of tenure. It is these previous changes that are more properly identified as enclosures in the economic sense.

In fact, it is possible to gain a totally inaccurate picture of enclosures by focusing on those accomplished through acts of parliament, and not only with respect to timing and numbers. Parliamentary enclosures often appear free from conflict and serve as models of 18th and 19th century administrative probity.[54] However, the enclosure movement as a whole was in essence a struggle over property rights. Enclosure was not a communal operation in which every member of the village community had an equal voice in the proceedings and from which each individual received an equal share of the spoils. Quite the contrary, even a so-called 'enclosure by agreement' was perpetrated by a small group of individuals who claimed exclusive rights to property and thereby acquired the privilege to exclude those not privy to the bargain. We can be fairly certain that in most cases in which enclosures proceeded without conflicts that the decisive battle over property rights had already been fought.

Many attempts have been made to explain enclosures. The process is seen by some as a series of separate and unrelated movements, each one the result of different causal factors: the wool trade, population growth,

technological change, shifts in demand, market opportunities, inflation, and many others. However, as Gonner emphasized, such a piecemeal approach gives an almost entirely false picture of what actually occurred.[55] Although the pace of enclosing activity was uneven, the movement is best viewed as a continuous process. The model described in the next section will help to reveal the workings of this process and to identify the rationale underlying it.

4

PARTIAL EQUILIBRIUM ANALYSIS OF ENCLOSURES

Our objective is to analyze the economic impact of enclosing a single open field village. In spite of the complex patterns of land use and crop mix which characterized open field agriculture, it will be possible to draw some important conclusions from certain general economic principles.

To keep the analysis simple, land, labor, and agricultural output are treated as uniform and homogeneous commodities. At least implicitly, we are postulating that the weights used for adding up different sub-components have been so miraculously set that by definition we can banish all the index number problems typically associated with aggregation.

Taking the total village land as given, we initially assume that two processes are available: sheep raising to obtain wool (pasture) and wheat production (arable). Table 1 indicates the technical coefficients for each activity.

Table 1

	Pasture	Arable
Units of Labor/Value of Output	α_p	α_a
Units of Land/Value of Output	β_p	β_a

From what we know of these two techniques, sheep raising is less labor but more land intensive than wheat growing. In symbols

$$\alpha_p < \alpha_a$$
$$\beta_p > \beta_a.$$

We wish to construct an aggregate production function for the village out of the data given in Table 1. Taking the total amount of village land as given (without loss of generality it is set at unity), such a function tells us for every quantity of labor input the corresponding maximum attainable value of agricultural output. The aggregate village production function is depicted as FF in Figure 1.

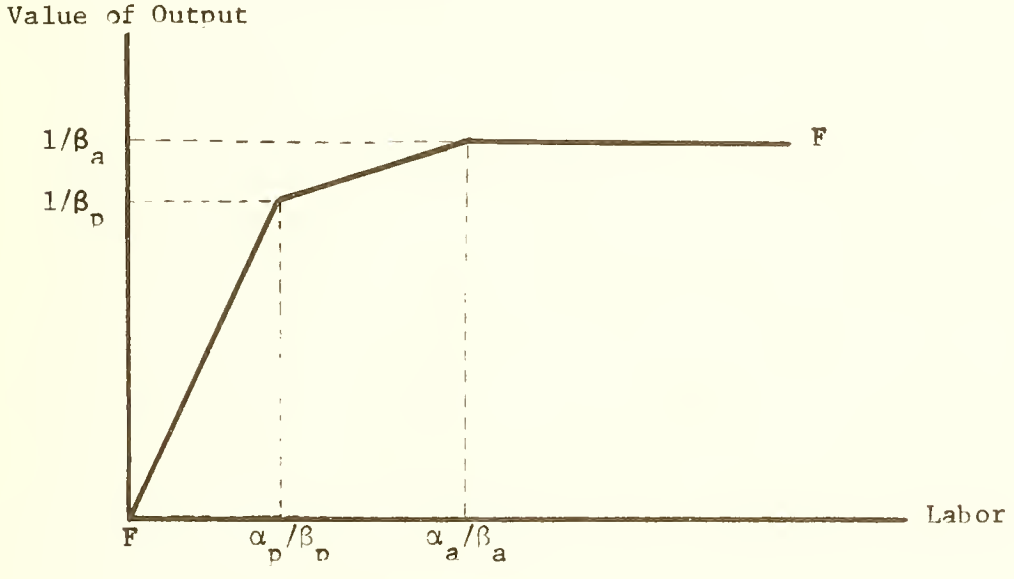

Figure 1

The total product curve of the village is made up of just three straight lines because we have so far limited the analysis to two processes between which the marginal product of labor is constant. Of course, more than two processes were available to a village. Aside from sheep and wheat, there were dairy husbandry, other cereal crops, and various vegetables, all of

which represented additional options, either separately or in combination, open to the villagers. Each of these processes can be described in terms of their land and labor coefficients which, we can assume, fall somewhere between the two extremes of sheep raising and wheat growing. For example, dairy farming required more labor than sheep husbandry but less than wheat growing. On the other hand, land requirements were lower for dairy farming than for sheep, but higher than for wheat. If we continue to increase the number of processes, we can in the limit describe aggregate production with a smooth curve like FF in Figure 2. The reader, however, must remember that underlying the smooth total product curve for the village are identifiable processes associated with various input mixes and with possibly different outputs.

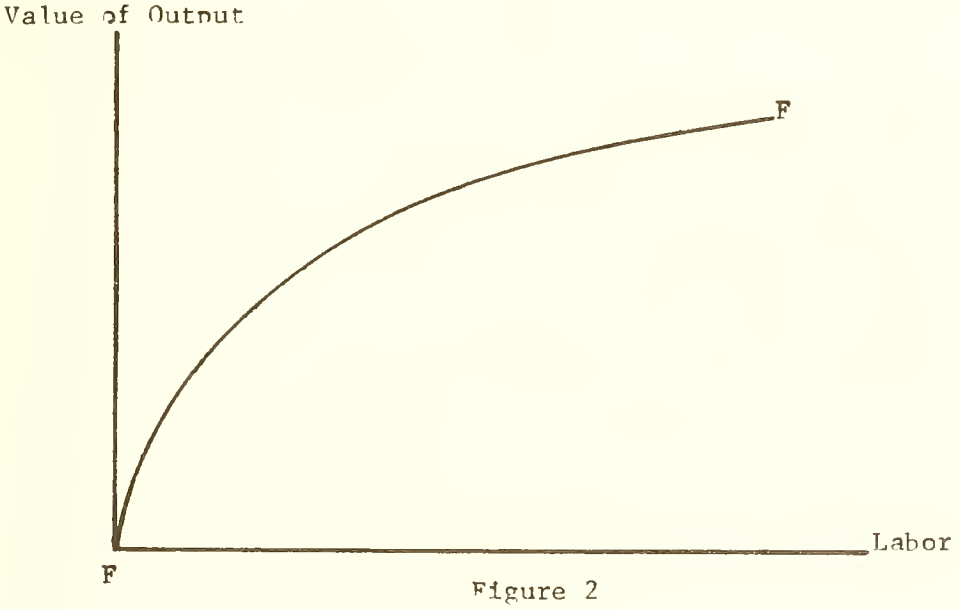

Figure 2

In an open field village, the peasants paid implicit or explicit obligations for their use of the land. We are taking such payments as relatively fixed by law or custom (possibly at zero in certain cases) and as non profit

maximizing. Elsewhere in this paper we discuss why it is improper to view feudal lords as profit maximizers and why the array of dues, duties and services made by a tenant did not constitute economic rent in the modern sense. In the present context we merely note that if a feudal lord's well being was a function not of his income alone, but also of the number of men under his control, then a behavior pattern which optimized overall utility would yield a sub-maximal amount of rent.

To highlight the basic economic features of the change from communal to private regulation of property, we first consider an extreme system of pure communal property in which no obligations are paid to the local lord. We will contrast this with the opposite extreme of pure private property where workers are in effect hired to maximize profits. Later in the analysis we will introduce nominal rent and head tax payments but will show that this in no way alters any basic conclusions.

In Figure 3 the slope of the straight line OA represents the average output per man in the village when there are $\bar{x}$ villagers. Taking this average standard of living $\bar{w}$ as a potential wage rate, the profit maximizing position in this village would be where the marginal product of labor is equal to the prevailing wage. That is, at point E in Figure 3 where the slope of the total product curve equals the going wage. In the pure communal case, since no one has the right to exclude, such points are unobtainable within the existing social structure.

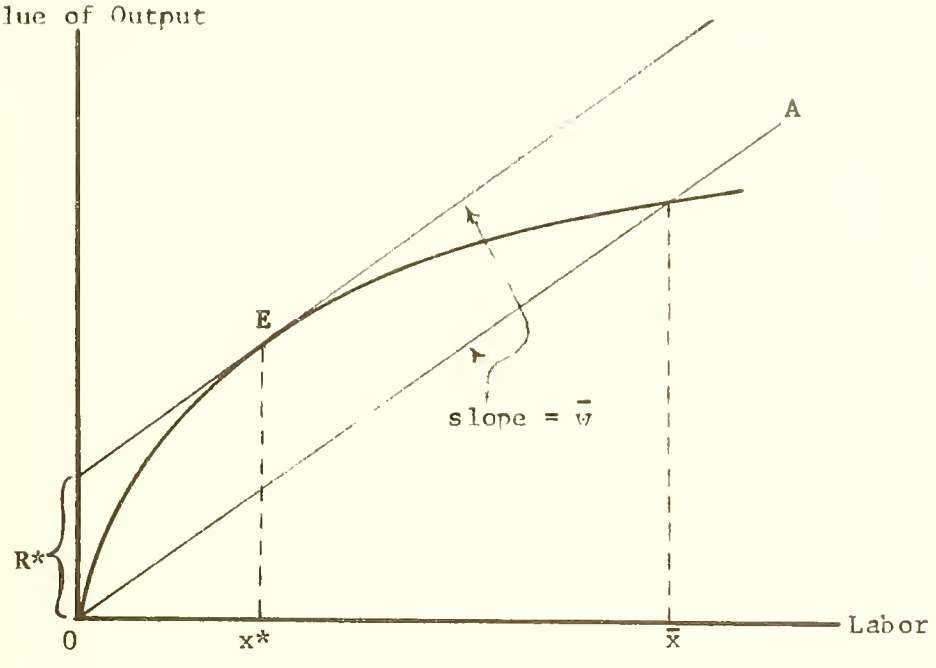

Figure 3

What role does enclosure play in this system? Assume that the lord begins to view his estate primarily as an income yielding asset. Whereas previously he calculated the value of his land mostly in terms of the number of subjects it supported, he now desires maximum profits independent of the size of the labor force. As a profit maximizer, the lord sees that if he could exclude $\bar{x} - x^*$ unnecessary workers and pay those who remain a wage equal to the prevailing standard of living $\bar{w}$, he could raise his income to R*. This would reduce agricultural output, but it would cut labor costs even more.

None of this is changed by introducing nominal feudal rents (or head taxes) which yield less than a maximum income. A "typical" pre-enclosure

village is represented in Figure 4. The lord collects a traditional rent of $\bar{R}$, while $\bar{x}$ peasants work the land at net per capita return to them of $\bar{w}$. Since this village is "typical," $\bar{w}$ is also approximately the prevailing peasant standard of living throughout the economy. This makes sense as an aggregate abstraction because it was happening "on average" for villages and because, due to migration, the nature of communal property and other causes, forces existed which tended to push in this direction at least to some extent. Again, when values change the lord begins to perceive that he can raise his income to R* by paying peasants at the going wage $\bar{w}$ and cutting back their numbers to x*.

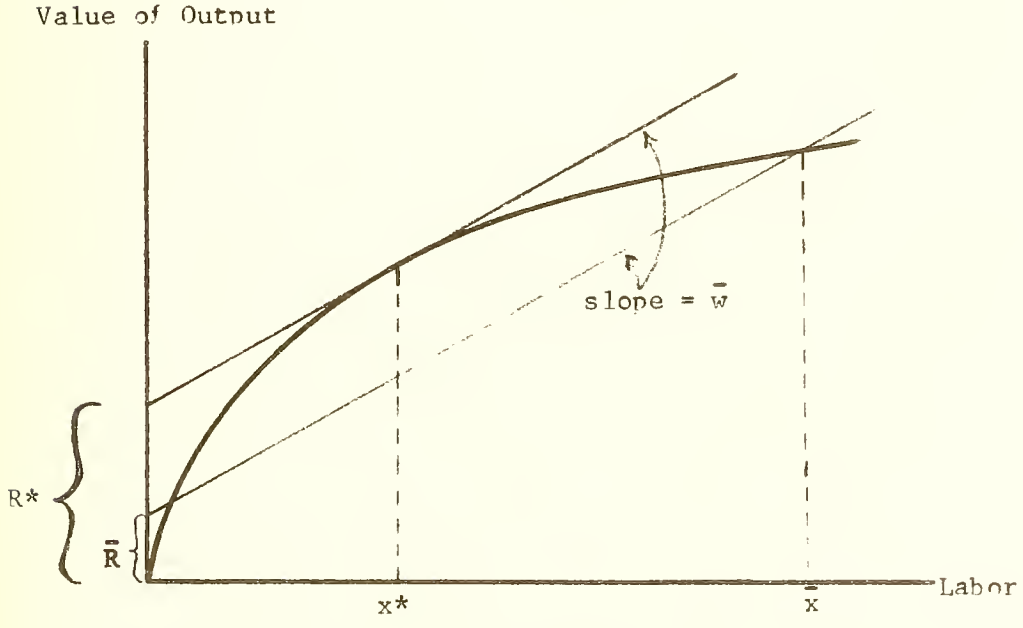

Figure 4

The wish for maximum profits independent of the size of the labor force represented a break with medieval values (where a lord measured his status not so much by his income from the land as by the number of men he commanded). Under this changed system of values, the right of exclusion becomes increasingly important. In England, enclosures proved the most effective way of establishing private property rights to the land. This is what we see as the essence of the enclosure movement.

The main thrust of this analysis, which is completely missed by all the writers on enclosures, is that by its economic nature the act of enclosure must lead to depopulation. That is why a would-be landlord encloses in the first place. Profits cannot be increased unless peasants are squeezed off the land. Of course the lord would not need to exclude peasants if they collectively agreed to pay the new maximal rent R^*, but they will refuse to do this. They could not raise a rent of R^* and yet have all $\bar{x}$ of them simultaneously remain on the village land without depressing their standard of living below the prevailing rate of $\bar{w}$.

When village land is enclosed, the profit maximizing landowner chooses to operate at a less labor-intensive point on the production function. To some of the $x^* - \bar{x}$ dispossessed peasants, it may appear as if they are being displaced for purely "technological" reasons because new, less labor-intensive techniques or commodities have come into being. In fact this is exactly the reverse of what actually occurs. A new technology is introduced precisely to save on labor.

This is about as far as we can go with a partial equilibrium analysis of enclosures. It can be used to provide insights into what happens on a single piece of land when it is enclosed. But to answer some more difficult questions concerning the overall impact of enclosures, we must move on to a more complicated general equilibrium framework.

5

THE GENERAL EQUILIBRIUM MODEL

Our aim in this section is to analyze the significance of enclosures for an entire rural economy. First we seek to quantify or state analytically production and distribution conditions in a pre-capitalist "traditional" agricultural system based on communal regulation of property. Then we compare such conditions with the relations which prevail under a "modern" commercial system based on private property ownership. Some rather sharp differences will emerge.

For analytical convenience, we treat the countryside as if it is split up into n non-overlapping localities or villages. The term "village" is used in an extended sense because it refers not to a collection of dwellings but rather to the land area under control of its inhabitants. A village (with no inhabitants) is imputed to be located even in unsettled areas.

The land of any given village is considered to be of uniform quality, although it may differ from one village to another. Alternatively, we can think of the land within a village as being non-homogeneous but distributed in such a way that every villager's holdings are divided in the same fixed proportions between lands of varying quality. So long as each man allocates his time between his holdings to maximize his total output, for our purposes the results will be the same as if village land were of uniform quality. We also treat labor as if it were homogeneous and uniform. This kind of an assumption is needed even to begin to talk about whether laborers as a whole are made better or worse off by different institutional arrangements.

The index i running from 1 to n will stand for village i. Let x_i denote the number of people working in village i. This results in total agricultural product y_i given by the production function

$$y_i = f_i(x_i).$$

It is important to be clear about the meaning of the above functional relation. As explained in the previous section, the production function $f_i(x_i)$ gives the maximum value of aggregate agricultural output in village i as a function of the number of people working in that village. When x_i is large, aggregate output is maximized by economizing on land and producing relatively labor intensively. In the range where x_i is small, the greatest value of output would be realized by using land-intensive, labor-saving techniques. Naturally the appropriate price-weights to use for aggregating outputs might shift over time, but for any given moment the interpretation of a village production function should be clear. In what follows we assume that as a first approximation village production functions are stable over time.

A typical village production function is depicted in Figure 5.

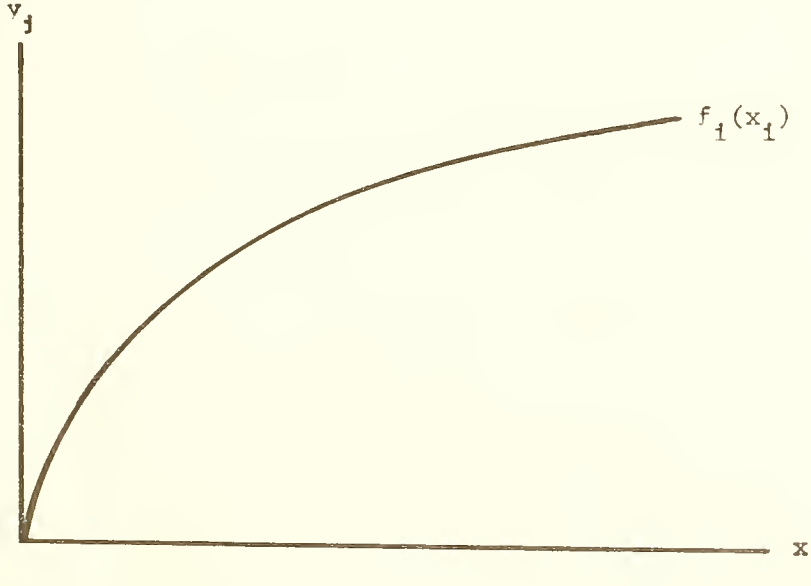

Figure 5

Production functions will normally differ from village to village due to varying conditions of soil fertility, climate, drainage, etc. The following three features are taken as standard for any village.

(1) $f_i(0) = 0$ (No output without labor)

(2) If $x_i < x_i'$, then $f_i(x_i) \leq f_i(x_i')$ (The more labor, the more output)

(3) If $x_i < x_i'$, then $\frac{f_i(x_i)}{x_i} > \frac{f_i(x_i')}{x_i'}$ (The more labor, the less output per laborer)

Purely for expository convenience, we assume that the derivative $f_i'(x)$ exists for all $x > 0$ (at $x = 0$ existence of the right hand derivative suffices).

To get a feeling for what the allocation of resources is like when there is communal ownership and for how it differs under private ownership, we first compare the polar situation where all property is strictly communally regulated with the opposite extreme where it is all private. These are unrealistic pure cases but they will serve to focus attention on the essential economic contrasts between communal and private property and to indicate what happens when an economic system makes the transition from one to the other. Later we consider more complicated "mixed" systems, but the results will be similar.

Communal ownership is one of the most ancient forms of land management. It is the predominant system for almost all primitive hunting, fishing, trapping and gathering societies and it is common to many primitive agricultural communities. We start by considering the pure economic theory of such an arrangement.

The essence of the communal ownership system in its pure form is that society as a whole denies to any individual or group the prerogative to block

the usage of commonly owned property. Anyone willing to work an equal amount as the other villagers can enter a village and is entitled to an equal share of the output. Note that there are no markets in labor or land.

What will be the distribution of labor on purely communally held land? Suppose that the prevailing return per man throughout the economy is $\tilde{w}$, with agricultural output as numeraire. Men will enter the i^{th} village if the average product in that village is greater than $\tilde{w}$ and leave it if the average product is less than $\tilde{w}$. In equilibrium $\tilde{x}_i$ peasants will settle in village i, where

$$\frac{f_i(\tilde{x}_i)}{\tilde{x}_i} = \tilde{w}.$$

This point is shown in Figure 6. If $f_i'(0) \leq \tilde{w}$,

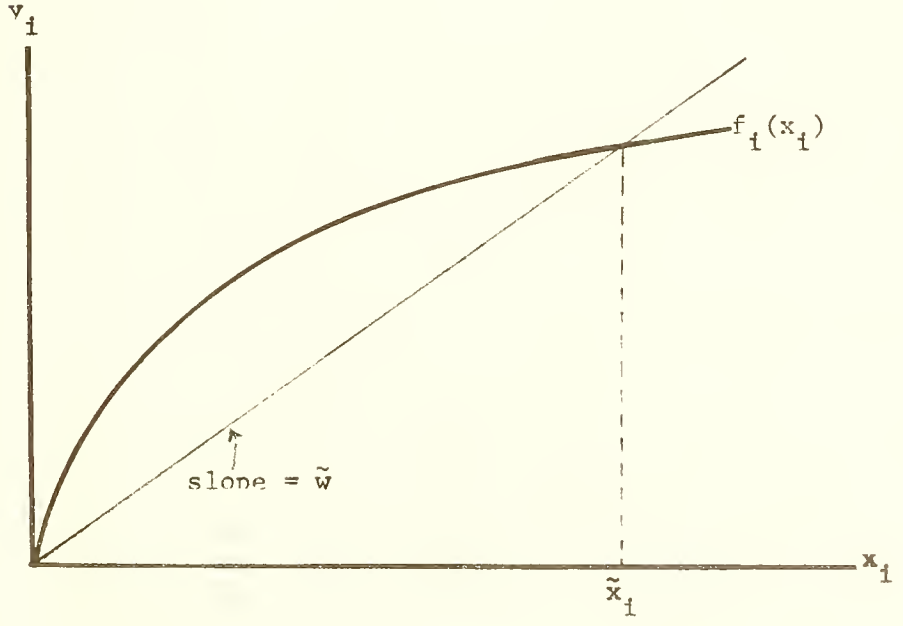

Figure 6

no one will be induced to enter village i because he can fare better elsewhere and the land of village i, which is of inferior quality, will not be cultivated. Such a situation is depicted in Figure 7.

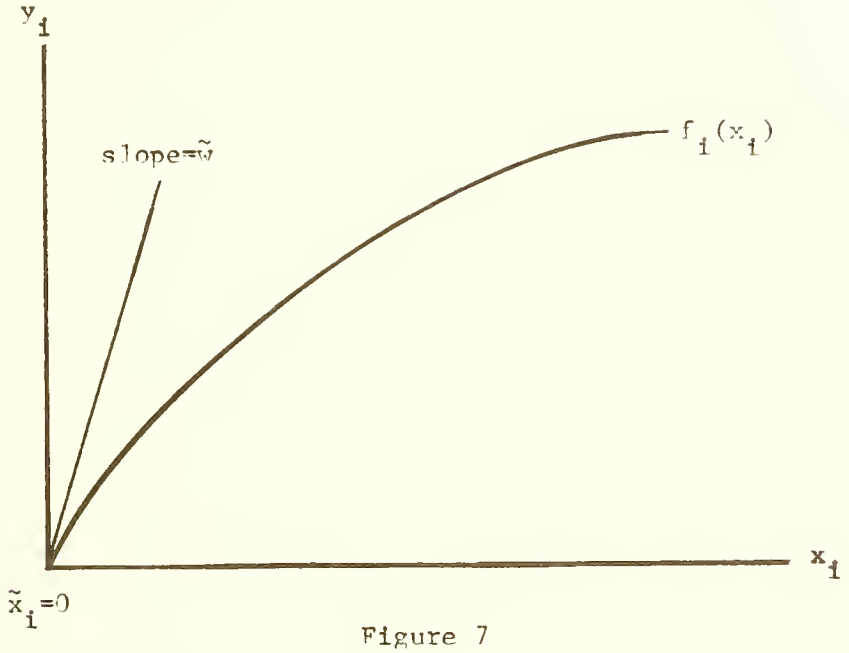

Figure 7

If people are mobile they will gravitate to that village offering them the most product per person. An equilibrium is reached only when the average product per person is equalized on all lands in use. In this case, there is no incentive for further movement. The equilibrium is stable because once out of it, forces are set in motion (via resettlement) which bring the system back to it.

The allocation system described above is denoted C (for communal) and the equilibrium values of variables in it are capped by a tilde.

Let there be a total of L laborers. The equilibrium values of $\{\tilde{x}_i\}$ and $\tilde{w}$ are determined as solutions to the following equations:

$$\tilde{x}_i > 0 : \frac{f_i(\tilde{x}_i)}{\tilde{x}_i} = \tilde{w} \tag{4}$$

(C)
$$\tilde{x}_i = 0 : f_i'(0) \leq \tilde{w} \tag{5}$$

$$\sum_1^n \tilde{x}_i = L \tag{6}$$

The opposite extreme to C is the case of pure private property in the context of a market economy. This kind of an economic system sanctions the property rights of a certain class or group who owns the land and determines its use. The services of land and labor can be bought and sold freely in the market, an operation which had no meaning under C. With competition, labor can be hired at a common wage, and income seeking land owners will hire that amount which maximizes their profits. When $\hat{w}$ is the prevailing wage rate in terms of output as numeraire, $\hat{x}_i$ workers will be hired in village i, where

$$f_i(\hat{x}_i) - \hat{w}\hat{x}_i = \max_{x \geq 0} f_i(x) - \hat{w}x.$$

If $\hat{x}_i > 0$, then

$$f_i'(\hat{x}_i) = \hat{w}.$$

The marginal product of the last worker hired equals the wage rate. In Figure 8 this point is illustrated.

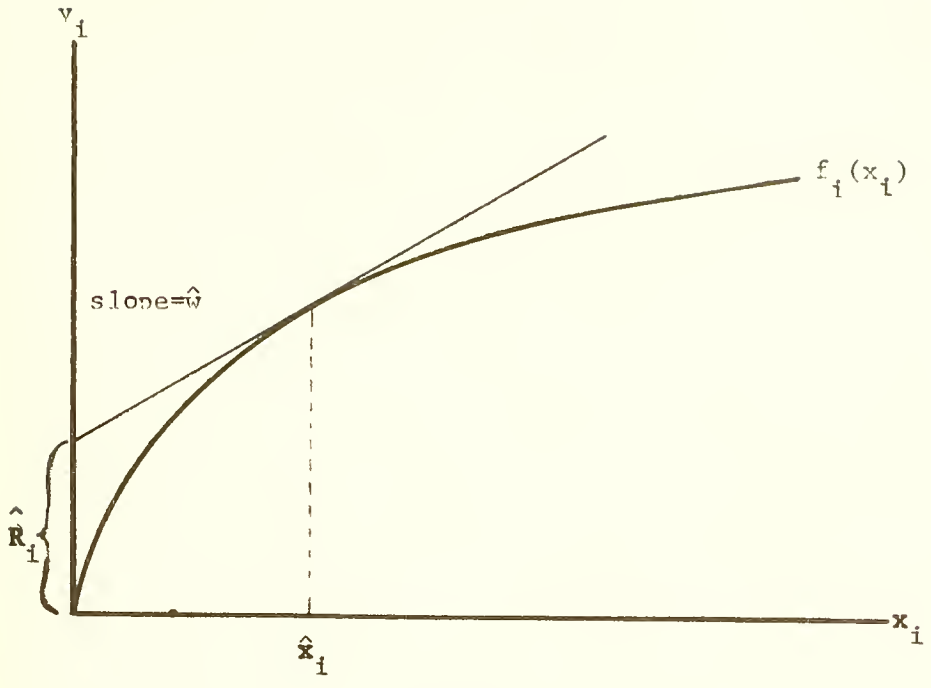

Figure 8

The rental income earned on land i, which will also be the competitive value of its service in exchange, is

$$\hat{R}_i \equiv f_i(\hat{x}_i) - \hat{w}\hat{x}_i.$$

A lower rent would not be income maximizing, whereas a higher rent would find no takers. If $f_i'(0) \leq \hat{w}$, it is not worthwhile to cultivate the land, no laborers will be hired, and the rental is zero. Such a situation can be depicted in Figure 7 with $\hat{w}$ replacing $\tilde{w}$.

Note that formally it is the same thing to a profit maximizing land owner whether he hires the optimal number of laborers at the going wage rate or charges a competitive rent for the use of his land and allows laborers to allocate themselves after paying the rent. With the one case we think of land as hiring labor, with the other of labor hiring land. In theory the

resulting allocation of resources and return to factors is the same with either case.

Our ultimate aim is to compare the pure private property market system, denoted P, with the pure communal property system C previously described. In order to be able to make a meaningful comparison, we assume that the physical basis of the economy - the production functions $f_i(x_i)$ and the total number of laborers L - is the same in both systems.

To close our model of this system we have to specify what the landlords do with the rental surplus they obtain. There are several possibilities. A landlord might himself "use up" the agricultural surplus, either by directly consuming it or by employing it to finance the import of foreign commodities. Alternatively, he could spend rental income on domestically produced manufactures, construction, and services - which we will call "S-goods."

Let λ be the amount spent on S-goods per unit of rental income ($0 \leq \lambda \leq 1$). Let the variable $\hat{x}_s$ denote the total amount of S-goods produced. To a first approximation, S-goods are produced by labor alone, without the help of fixed capital or the use of agricultural commodities as intermediate materials. Thus, an S-good can be measured by its direct and indirect labor content. With competition, the price of a unit of S-goods must be $\hat{w}$, the prevailing wage rate. The total amount of S-goods that would be purchased with rental income $\sum_1^n \hat{R}_i$ is $\lambda \sum_1^n \hat{R}_i / \hat{w}$. Exactly as many workers (Quesnay's "classe sterile") will be drawn out of agricultural production to satisfy this demand.

The P (private property) equilibrium system we have been describing, whose variables are capped with a circumflex, therefore satisfies the following three equations

$$\hat{R}_i \equiv f_i(\hat{x}_i) - \hat{w}\hat{x}_i = \max_{x \geq 0} f_i(x) - \hat{w}\hat{x} \tag{7}$$

(P)
$$\lambda \sum_1^n \hat{R}_i = \hat{w}\hat{x}_s \tag{8}$$

$$\sum_1^n \hat{x}_i + \hat{x}_s = L. \tag{9}$$

In the long course of historical development, economic societies can be viewed as moving in a general way from C to P (and then beyond when capital starts to be accumulated). Suppose we indulge in the fantasy that instead of a long drawn out process, the transformation from C to P takes place overnight. What kinds of differences would we expect to find between the C and P economies? Of course such a transformation did not at all take place quickly, and many things happened along the way, but our extreme way of posing the question will isolate such differences as arise purely from changing the economic system itself.

The most immediately striking difference between the two systems is that in the P system there is an agricultural surplus of magnitude $\sum_1^n \hat{R}_i$ which is extracted by the landowners. This surplus manifests itself in part by causing a net transfer of workers out of agriculture to satisfy the demand for domestically produced non-agricultural goods which it creates. In C, on the other hand, villagers themselves consume everything that they

produce. There are no surplus activities (like the production of S-goods), there is no reason to transfer workers out of agriculture as there is in P, and there is no potential for accumulation. The accumulation of capital, largely financed at first out of rental income, eventually carries the P system forward into a new phase of development where the prime mover becomes the accumulation of capital (which raises labor productivity wherever it is employed). But this comes later, after the transition from C to P, which is the subject of our present analysis.

A less apparent difference between the two systems is that P is efficient whereas C is not. The peasants in C are inefficiently distributed on the land. By reshuffling the existing amount of labor, greater total output could be achieved.

This phenomenon can be illustrated by the following numerical example. Suppose there are two villages, A and B, and a total of 5 laborers. The production function for village A is

$$y_a = 12x_a - 2x_a^2,$$

and for village B it is

$$y_b = 7x_b - 1/2\ x_b^2.$$

Production in village A is more productive for small numbers of men, but the production function runs into diminishing returns more rapidly.

For C, the distribution of men on land obeys the equations

$$\frac{12x_a - 2x_a^2}{x_a} = \frac{7x_b - 1/2x_b^2}{x_b}$$

$$x_a + x_b = 5$$

which has the solution $x_a = 3$, $x_b = 2$.

Each man gets 6 units of output. But this is inefficient. To maximize total output it is the marginal product of labor that should be equalized among different lands, not its average product. In the example above the marginal product of labor in village B is five, but it is zero in village A.

The distribution of the five laborers which would maximize total output equalizes marginal products and therefore obeys the equations

$$12 - 4x_a = 7 - x_b$$

$$x_a + x_b = 5.$$

This has the solution $x_a = 2$, $x_b = 3$ with a uniform marginal product of 4 in both villages. Total output per man is $(16 + 16\ 1/2)/5 = 6\ 1/2$, higher than that obtainable under C.

The preceding example could easily be generalized. Under average product equalizing, the better properties are overworked and the maximum output is not realized. It would be more efficient to transfer people from the overcrowded lands of better quality where their marginal product is lower to those of poorer quality where their marginal product is higher. In the P system marginal products are automatically equalized due to profit maximization with a uniform wage, and it is impossible to increase the output of agricultural produce given the number of laborers working in agriculture. This is not true for C, which is an inefficient system yielding less than its maximum possible agricultural product.

There is an alternative way of looking at the efficiency issue which may be just as instructive. Although the composition of output is different in the two systems, national product as conventionally measured (with

agricultural goods as numeraire) will have to be higher in P than in C.

The national product in P is

$$\sum_{1}^{n} f_i(\hat{x}_i) + \hat{\hat{w}}\hat{\hat{x}}_s,$$

while in C it is

$$\sum_{1}^{n} f_i(\tilde{x}_i).$$

From (7),

$$f_i(\hat{x}_i) - \hat{\hat{w}}\hat{x}_i \geq f_i(\tilde{x}_i) - \hat{\hat{w}}\tilde{x}_i \qquad \text{for all } i$$

with strict inequality if $\hat{x}_i \neq \tilde{x}_i$. Summing the above inequality,

$$\sum_{1}^{n} f_i(\hat{x}_i) - \hat{w}\left(\sum_{1}^{n}\hat{x}_i\right) > \sum_{1}^{n} f_i(\tilde{x}_i) - \hat{w}\left(\sum_{1}^{n}\tilde{x}_i\right),$$

which can be rewritten as

$$\hat{\hat{w}}\hat{\hat{x}}_s + \sum_{1}^{n} f_i(\hat{x}_i) - \hat{w}\left(\sum_{1}^{n}\hat{x}_i + \hat{x}_s\right) > \sum_{1}^{n} f_i(\tilde{x}_i) - \hat{w}\left(\sum_{1}^{n}\tilde{x}_i\right).$$

Using (6) and (9), we have

$$\sum_{1}^{n} f_i(\hat{x}_i) + \hat{\hat{w}}\hat{\hat{x}}_s > \sum_{1}^{n} f_i(\tilde{x}_i) \qquad (10)$$

which is the result to be proved.

We now ask a fundamental question whose answer will have far reaching consequences for our analysis. Under which system do the peasant-laborers fare better? P is an efficient system and in it the pie of national income is higher than in C. But the workers in P are getting only a slice of the pie, while as peasants they get all of it in C. So the answer would appear to be ambiguous.

Nevertheless, we can prove that in all cases the working population must be better off under C than under P. That is,

$$\tilde{w} > \hat{w}. \tag{11}$$

This theorem is proved as follows:

Suppose first there is an integer j with $\hat{x}_j > 0$ and $\hat{x}_j \geq \tilde{x}_j$. Then

$$\tilde{w} \geq \frac{f_j(\tilde{x}_j)}{\tilde{x}_j} \geq \frac{f_j(\hat{x}_j)}{\hat{x}_j} > f_j'(\hat{x}_j) = \hat{w},$$

where

$$\frac{f_j(0)}{0} \equiv f_j'(0).$$

If $\hat{x}_i < \tilde{x}_i$ for all $\hat{x}_i > 0$, then $\sum_1^n f_i(\hat{x}_i) < \sum_1^n f_i(\tilde{x}_i)$. This implies that

$$\hat{wL} = \sum_1^{n_\wedge} \hat{wx}_i + \hat{wx}_s = \left(\sum_1^n f_i(\hat{x}_i) - \sum_1^{n_\wedge} R_i\right) + \lambda \sum_1^{n_\wedge} R_i = \sum_1^n f_i(\hat{x}_i) - (1-\lambda)\sum_1^{n_\wedge} R_i$$

$$< \sum_1^n f_i(\tilde{x}_i) = \sum_1^{n_{\sim\sim}} \tilde{wx}_i = \tilde{wL}.$$

In either case we have the result to be proved.

The implications of (11) are important. While P is efficient and has a higher national income than C, the workers don't share in the increased benefits.

Because the price of non-agricultural commodities is primarily determined by labor costs, in the P system by comparison with C the terms of trade have moved in favor of agricultural goods and against manufactures, construction, and services. It is also easy to see that labor productivity is higher in P agriculture than in C, or that

$$\frac{\Sigma f_i(\hat{x}_i)}{\Sigma \hat{x}_i} > \frac{\Sigma f_i(\tilde{x}_i)}{\Sigma \tilde{x}_i}.$$

What about the total output of agricultural commodities? Is it greater under P or C? The answer depends on the propensity to spend rental income on domestically produced non-agricultural goods and services. If λ is small, for example when rentiers are marketing most of the surplus abroad, the agricultural output of P exceeds that of C. If on the other hand all rental income is spent on domestically produced non-agricultural items ($\lambda = 1$), so many laborers must be siphoned out of agriculture that its output is lower under P than C.

What are the effects on land usage of changing from C to P? As we have already noted, under P the number of agricultural workers will decline by $\hat{x}_s$. Peasants move off the land, seeking work in manufacturing and other trades which satisfy the growing demand for non-agricultural goods arising out of increased rental income. The better pieces of land will have less workers on them under P than under C (this notion could be quantified and proved as a theorem). On the other hand new lands which were marginally undesirable under C will now be brought into cultivation for the first time. If a village i is such that $\hat{w} < f_i'(0) < \tilde{w}$, it will be settled under P whereas it was unpopulated under C. The transition from C to P thus evens out settlement patterns, moving people off the better lands, into the cities and onto newly cultivated areas.

So far we have been carrying out the analysis of this section as if the transition from communal to private property occurred instantaneously. That assumption has given us some valuable insights. Now it is appropriate to analyze in the context of a more realistic general equilibrium model what happens when just a single village is turned into private property or "enclosed." Although the analysis is slightly more complicated, we will see that all the basic conclusions of the simpler story are borne out.

Suppose that at a given time the total of n villages are divided into m open-field, traditionally organized villages and n-m enclosed villages run along profit maximizing lines. In each of the m open-field villages peasants pay implicit or explicit obligations for their use of the land. Whether they are in the form of a head tax or a land rent, the essence of traditional feudal obligations is that they are relatively fixed by law or custom (possibly at zero in certain cases) and that they yield the lord less than a profit maximizing income.

What will be the equilibrium number of workers in open-field village i, where $1 \leq i \leq m$? Let $\bar{R}_i$ be the fixed feudal rent on the land of village i, and $\bar{\tau}_i$ the fixed feudal head tax. These are a stylized representation of medieval economic obligations. If there are $x_i > 0$ villagers in i, the net return per man will be

$$\frac{f_i(x_i)}{x_i} - \frac{\bar{R}_i}{x_i} - \bar{\tau}_i$$

In equilibrium this must equal $\bar{w}$, the prevailing standard of living throughout the economy. If $\bar{x}_i$ is the equilibrium number of workers in village i, then

$$f_i(\bar{x}_i) = \bar{R}_i + (\bar{w} + \bar{\tau}_i)\bar{x}_i. \tag{12}$$

This solution is depicted graphically in Figure 9.

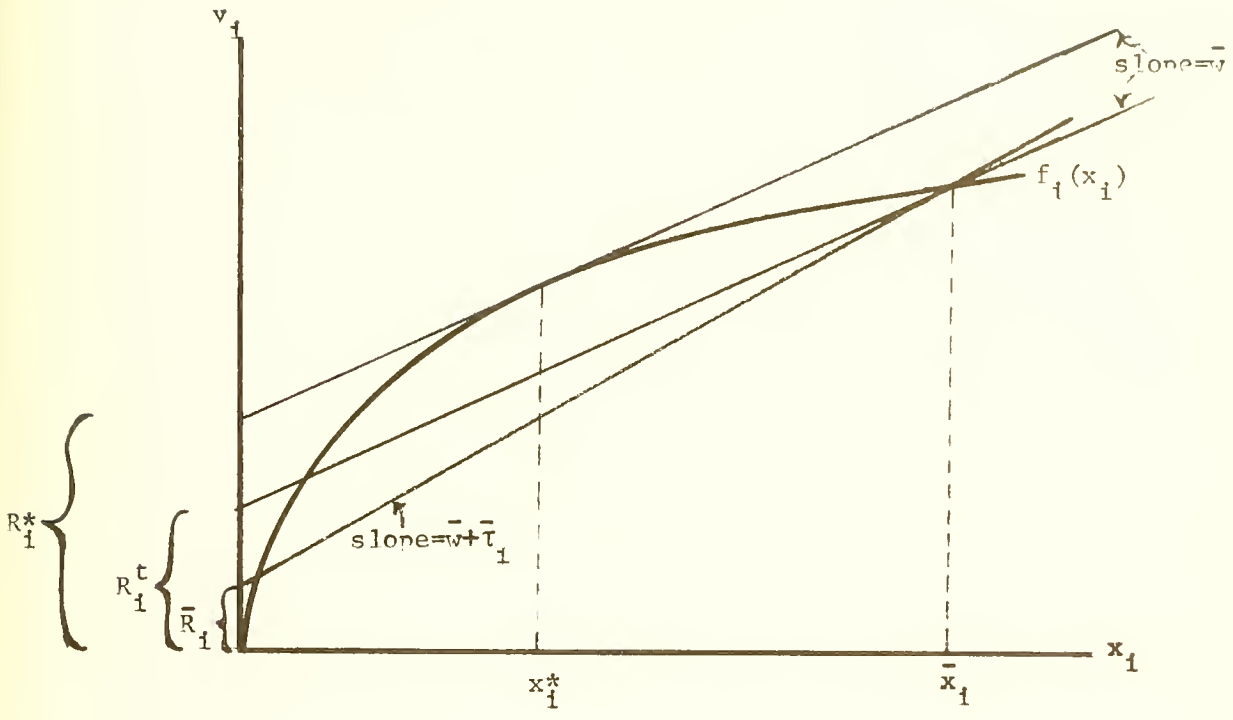

Figure 9

At the point $x_i = \bar{x}_i$, (12) is satisfied and each peasant received $\bar{w}$. The total return which the feudal landlord receives is

$$R_i^t \equiv \bar{R}_i + \bar{\tau}_i \bar{x}_i = f_i(\bar{x}_i) - \bar{w}\bar{x}_i.$$

This is less than the profit maximizing return of R_i^*, obtained after enclosure by employing only x_i^* laborers, at the point where $f_i'(x_i^*) = \bar{w}$.

Now suppose village m is enclosed. The equilibria before and after this event are as follows:

Before m is enclosed	After m is enclosed
$\bar{x}_i > 0$: $f_i(\bar{x}_i) = \bar{R}_i + (\bar{w} + \bar{\tau}_i)\bar{x}_i$	
$\bar{x}_i = 0$: $f_i'(0) \leq \bar{w}$, $\bar{R}_i = 0$, $\bar{\tau}_i = 0$	
$i = 1, \ldots, m$	$i = 1, \ldots, m-1$
$R_i^* \equiv f_i(x_i^*) - \bar{w}x_i^* = \max_{x \geq 0} f_i(x) - \bar{w}x$	
$i = m+1, \ldots, n$	$i = m, \ldots, n$
$\bar{\bar{w}}\bar{x}_s = \lambda\left[\sum_1^m (\bar{R}_i + \bar{\tau}_i\bar{x}_i) + \sum_{m+1}^n R_i^*\right]$	$\bar{\bar{w}}\bar{x}_s = \left[\sum_1^{m-1} (\bar{R}_i + \bar{\tau}_i\bar{x}_i) + \sum_m^n R_i^*\right]\lambda$
$\sum_1^m \bar{x}_i + \sum_{m+1}^n x_i^* + \bar{x}_s = L$	$\sum_1^{m-1} \bar{x}_i + \sum_m^n x_i^* + \bar{x}_s = L$

Note that before a village is enclosed, the feudal obligations $\bar{R}_i$ and $\bar{\tau}_i$ are treated as fixed and exogeneously given. After enclosure the profit maximizing rental R_i^* is endogenously determined (as are $\bar{w}$, all the $\bar{x}_i$, and all the x_i^*).

The results of changing a single village from open-field control to private property are just a scaled down version of what happens when the whole system changes from pure communal to pure private property. The return to labor is lowered, the surplus goes up, land previously untilled gets drawn into cultivation, the terms of trade turn in favor of foodstuffs, national income rises, there is a net flow of workers out of agriculture, etc.

As we have seen, when an open-field village is enclosed, it must be depopulated. Where do the displaced laborers from the enclosed village go? Since each enclosure nudges the prevailing wage rate down, profit maximizing landlords on previously enclosed land will want to hire more wage laborers. Some displaced workers will crowd into the remaining unenclosed villages because the return obtainable there looks more attractive when the general standard of living is lower. Virgin land will be called into cultivation because the marginal product of the first worker becomes higher than the prevailing wage and a fraction of the displaced people will move there. Finally, as rents rise, the demand for non-agricultural goods financed out of the surplus increases, causing centers of manufacturing and other non-agricultural trades to attract some newly displaced immigrants. Thus, as enclosures proceed, they give rise to a lot of population movement and resettlement, accompanied at all times by a decline in the standard of living of the working population.

In summary, other things being equal, when village land is enclosed:

1) Peasants are displaced from the newly enclosed land.
2) The standard of living of the working population declines.
3) Rents rise and the surplus increases.
4) Less labor-intensive techniques are used on the newly enclosed land.
5) The population of other villages rises.
7) New lands are settled.
8) National income is higher.
9) Agricultural output is produced more efficiently.
10) The terms of trade move in favor of agriculture against industry.
11) There is a net flow of labor out of agriculture.

Of course it would be foolish to maintain that the extent to which effects 1) - 11) have been observed is evidence of the validity of our approach. History did not stand still during the many centuries of enclosing activity, and the effects predicted by our theory may have been caused at least in part by other factors. Great changes accompanied the enclosure movement, including changes in population, technological knowledge, and capital. It would not be difficult to spell out the implications of these and other exogeneous changes (to a certain extent they are already familiar). But even after it were done, a component of effects would remain due to the enclosure movement per se. It is this ceteris paribus pure component which we have tried to isolate. What has been observed in the real historical record is naturally a sum of effects due to all the components, including this one. It is our further contention that the particular component we have isolated is significant, although it has been relatively neglected. We deal with this issue in the next section.

6

APPLICATIONS OF THE MODEL

Introduction

The value of our model lies in its ability to provide a coherent, logically consistent framework for analyzing the causes and consequences of enclosures. In this section we will make explicit use of the model to shed light on many of the controversial issues which surround the enclosure movement. We are well aware of the limits of our approach and wish to claim no more for our model than is justifiable. A few methodological comments may help to make clear what we consider the proper scope of this study.

Most work in economic history one way or the other relies on propositions derived from conventional economic theory. The mode of presentation is determined in part by the nature of the inquiry, in part by the training of the researcher, and in part by the composition of the intended audience. Although some economic historians would contend that the use of an economic model automatically leads to a neglect of historical reality, such a position is untenable. In fact, it can be argued that an explicit statement of the economic principles underlying a particular argument has the great benefit of exposing the actual structure on which the analysis is based. This is an advantage whether one is dealing with contemporary problems or with historical ones. Although the model building approach is unlikely to resolve any particular controversy in economic history to everyone's satisfaction, it can at least define the issues more precisely and establish a frame of reference for dealing with them. It is for these reasons that an analytical mode is especially useful for treating enclosures.

Our model's stylized description of commercial agriculture is commonplace among contemporary economists and is extremely useful in spite of its gross abstractions from reality. The generalizations concerning the medieval economy ought to be viewed in the same spirit. No one believes that a commercial landlord literally maximizes profits, but that proposition seems to be about the best simple analytic approximation to his behavior. Similarly, the essential feature of manorial obligations for theoretical purposes is that they were institutionally determined, were <u>not</u> income maximizing and were very sticky. Economists often use the marginal productivity theory to explain the "wage level" in various situations even though no economist would be prepared to argue that all workers are actually paid the same.

The point is that in a market situation competition creates a sufficient tendency toward equalized marginal products to make the marginal productivity theory a reasonable basis for determining the average wage in aggregate analysis. Similarly, communal regulation, a sense of equality, and mobility created in the open field system enough of a tendency for equalized average products (net of fixed obligations) to make this principle the basic underlying determinant of a median peasant's standard of living under open field agriculture.

Since any statement about the allocation of men on land implies a certain model of distribution, there is no escaping the necessity of specifying such a model. (Even a so-called "random" allocation of people conforms to a particular, quantifiable principle.) This point is extremely important. It would be unfair to reject our model of distribution without implicitly or explicitly subscribing to an alternative. Merely pointing out particular instances when a given distribution principle is violated simply does not speak to the issue of whether or not that principle is in some sense the most appropriate representative from the class of all possible applicable principles. Our results follow directly from our specific formulation of the basic principles of distribution under "feudal" and "capitalist" agriculture. The formulations may indeed be incorrect, but in order to convincingly maintain this it would be absolutely necessary to constructively demonstrate a viable alternative.

No model could ever hope to specify in complete detail the "feudal" and "capitalist" modes of distribution. Our aim is simply to use the relevant abstractions of these systems to illustrate the economic consequences for a rural economy of going over from one to the other. Whether

an abstraction is relevant or not naturally depends on its purpose. In this case the objective is to compare economic conditions in the aggregate before and after enclosures, and for that we need only to establish a rough approximation of the basic principles of distribution. The relevant abstraction of how peasants were distributed on the land under open field agriculture is the principle of equalized net average products - not because it is a literally true description, but because what actually occurs can be thought of as brought about by some kind of random process distributed around this basic principle (as opposed to some other). Similarly, the relevant abstraction of private property distribution is that marginal products are equalized because the actual operation of a competitive market economy can be regarded as this principle plus uncertainty. It is not the amount of variance that is important for our purposes so much as the central principle around which the variation is occurring. Although the competitive model is familiar and widely accepted, it is no less of an abstraction than average product equalization under a system of communal property. We feel confident that we have identified the correct abstractions as central principles, but in the last resort this is an issue that the reader must decide for himself.

In the remainder of this section we examine by subtopics the standard versions of the causes and consequences of the English enclosure movement. Then we treat briefly the transition from traditional to commercial agriculture in a general economic development context. Our aim throughout this section is to compare and contrast our model with various other viewpoints. Hopefully this will provide some semblance of unity to what might otherwise appear to be a somewhat episodic survey of the enclosure literature.

Causes of Enclosures: The Wool Trade

According to this type of analysis, enclosure for arable occurred when the demand for wheat rose and enclosure for pasture took place when the demand for wool increased. The most prominent example of this kind of approach is the argument that Tudor enclosures were a response to a rise in the demand for wool, especially for woolen cloth exports, between about the mid 15th to mid 16th centuries.[56] This increase in wool demand allegedly resulted in a rise in the price of wool relative to the price of corn. Farmers were encouraged to raise more sheep by putting down more land to permanent pasture. Compact farms were better adapted for sheep farming since fences were useful to keep the animals from straying onto the arable. An unavoidable result was depopulation, since sheep raising required more land and less labor than mixed farming.[57]

Although this general line of analysis is widely accepted, there are reasons to doubt its validity. There are many examples of enclosure not followed by conversion to pasture. Furthermore, detailed regional studies have shown that enclosures were followed just as often by a shift to some form of convertible husbandry as by complete conversion to pasture.[58] This conformed to the best advice available to landowners: Fitzherbert, Tusser, and other 16th century agricultural writers advocated enclosures as a means to introduce convertible husbandry.[59] They explicitly opposed conversion to permanent pasture. A shift to mixed farming is not what we would expect if sheep were the only cause of depopulation and if sheep-masters were the only enclosers.[60] Royal commissioners empowered by the Tudor monarchs to investigate enclosing activities were well aware that enclosures were not by any means just for permanent pasture.[61]

A major problem with the wool trade explanation is that the price data simply do not support the argument.[62] If the analysis were correct, we would expect the price of wool to rise relative to the price of grain. On close inspection of the available data we can find no systematic difference in the trend of wool and grain prices between 1450 and 1550. If anything the price of wool declines relative to the price of grain.[63] The data so blatantly contradict the standard analysis that it is difficult to understand how it has managed to maintain such general acceptance.

It is conceivable that an increase in the amount of wool demanded has been confused with an increase in the demand for wool. There was an undeniable expansion in English exports of unfinished woolen cloths between 1450 and 1550. The data on exports, more reliable than most for that period, demonstrate a marked upward trend.[64] Our point is that the standard analysis has focused exclusively on demand and has overlooked the possible push which came from the supply side. The enclosing of land always led to a movement back along the total product curve to a less labor intensive process. In many cases this must have meant converting some land from arable to pasture. With only slight exaggeration it is possible to argue that the conventional story of Tudor enclosures is the exact opposite of what occurred - the enclosure movement gave rise to the wool trade rather than the other way around.[65]

Technological Factors

The "wool trade" explanation is just one of many that regard enclosures as a series of separate movements, each one mechanically determined by different forces. Various attempts to explain enclosures in terms of some kind of technological imperative fall into this category. We do not

mean to imply that technological change did not occur in agriculture, nor that it was unimportant, only that there is no reason to link it to enclosing.

At one time it was commonplace to maintain that scientific methods of stock breeding, new crops and crop rotations, and modern techniques of enhancing soil fertility were all incompatible with open field agriculture.[66] It was because open field farms seemed to preclude the introduction of new techniques that the shift to enclosed farms appeared to depend on technological change. But open field farming was in fact much more amenable to new techniques than was once believed.[67] Through various expedients, frequently by means of a change in village by-laws, open field agriculture was altered to facilitate the introduction of new farming techniques. Root crops, clover, fainfoin, trefoil, and lucerne were cultivated in open field areas as well as on enclosed farms. Even the floating of water meadows, a task which required substantial labor and capital inputs by 16th and 17th century standards, was done in open field areas. New rules were designed to regulate the use of common grazing areas both to prevent diseased animals from infecting healthy ones and to control the breeding of quality bulls and rams.[68]

The tendency to assume that enclosed farms were undisputed technological leaders is similarly disputable. It may be true that enclosures facilitated the introduction of some new methods, but it did not guarantee that they would be adopted.[69] In many areas agriculture practices on enclosed farms were no less backward than on common lands.[70] The evidence suggests that no simple causal relationship existed between the new technology and the enclosure movement.[71]

In our framework, production functions do not shift as a result of

enclosure itself. This seems to us the best way to distinguish the impact of enclosures per se from the influence of other concurrent but more or less independent changes in the agrarian sector. The increases in efficiency due to enclosures were more of the sort "...that could be achieved by reorganization of existing resources rather than by invention of new techniques."[72] In an economic sense, it was as if production moved from some point inside the production possibilities frontier to a point on the frontier instead of the frontier itself shifting.

Inflation:

The so-called "price revolution" of the 16th century sometimes receives credit for the early enclosures. The argument is that when rents and other customary medieval obligations were fixed in money terms, their real value tumbled as prices rose. A landlord whose income was based on these payments was thus compelled to try any reasonable expedient to maintain his economic position. Since enclosure among other things gave the landlord power to abolish customary payments and to raise rents, he enclosed when inflation began to cut into the income from his land. The main trouble with this analysis is that the price revolution dates from around 1520, a full fifty years after enclosures had become a serious social problem,[73] and it ends well before the enclosure movement comes to a halt. The steep rise in prices of the 16th century did indeed create severe difficulties for those who were unable to adjust traditional monetary obligations upward. In many cases the inflation probably presented a forceful incentive to enclose. Our point is that enclosures would have occurred (and did so) even without this kind of pressure. Monetary arguments (as well as other partial explanations) simply fail to account for the essence of the enclosure movement.

A Plausible Explanation

In our model, the main force behind the enclosure movement was an urge to maximize profits from the land. In this, the agent of change was the profit seeking landlord. He began to view land less as a definition of rank, as a valuable source of traditional services, and more as an income yielding investment. The paternalistic relationship between manorial lord and tenant gave way to one based on profit maximization in a market economy.[74]

It is beyond the scope of our paper to explore the causes which underlay the rise of "capitalism" or of the "profit motive" in the early 16th century. Most historians consider it a gradual process which evolved slowly over an extended period of time. Although this is the proper way to regard so fundamental a change in attitudes and ideas, we would contend, as many others do, that the Tudor period in England marked a watershed in the break-up of feudal mentality. While it is extremely difficult to disentangle causes and effects in so complex a process, there is some consensus that the relative increase in internal stability (even if only temporary) caused by the rise of a centralized authority, the long-term influence of trade expansion, innovations in military technology, secularization of religious doctrine, the growth of new opportunities and new consumption desires, each in some fashion supported the development of a profit oriented society. For our purposes, it is enough to take the gradual rise of a commercial mentality as determined outside of our system in order to describe the allocative and distributive consequences of the enclosure movement.[75]

Consequences of Enclosures: Rent Increases

Our theory predicts that rents must rise on newly enclosed estates. In fact, the evidence for the early enclosures leaves no doubt that this was the case.[76] As Lawrence Stone notes

> The most obvious and most common form of direct improvement was enclosure by which all surveyors were agreed it was possible to increase the value of arable and pasture by fifty per cent....Once consolidated and enclosed, the demesne could be let in blocks of 100 acres or so to substantial farmers from whom a substantial rent could be expected.[77]

Fitzherbert and Tusser, among others, agreed that rents rose appreciably on newly enclosed lands. Even parliamentary enclosures, particularly when they occurred in areas which had undergone relatively little engrossing or consolidation, pushed up the rental value of land.[78]

Changes in Tenure

In a strictly formal sense a landlord who had clear title to a piece of land had no need to enclose it if he could raise rents. But in most cases his ability to do so on traditional peasant holdings[79] was proscribed by law.[80] This does not mean that rents were immutable, only that custom prevented them from being at profit maximizing levels. Beginning in the late 15th century, many landlords resorted to various expedients to circumvent the constraints which tradition placed on raising rents to their full economic value. One of the more common devices was the beneficial lease, a compromise between copyhold and a modern leasehold tenure, which allowed a lord to raise the arbitrable fine associated with old tenures and to leave unchanged the customary rent payment.[81] But the beneficial lease was at best a short-run measure. Although tenants found it preferable to a short

term lease with high annual payments, by the 17th century most substantial lords realized that the beneficial lease did not permit them to maximize the return from their estates.[82] A lord's position was clear. If he wanted to maximize his income, he had to persuade or force his tenants to surrender their copies and take new leases at market determined rents. In many cases, it was only through enclosure that conversion to modern leasehold tenure was accomplished.

There is another feature to consider. All landlords were agreed that a good estate was one made up of large farms run by substantial tenants.[83] Among other things, the larger tenant could pay a higher rent than the smaller ones and could pay it regularly.[84] The principal way to bring about this shift to larger farms was to consolidate and enclose. For most landlords the attraction of enclosure was precisely that it increased rents, got rid of the smaller and attracted the larger tenant.[85] Enclosure was only a means to an end, and by far the most expedient means available.

L. A. Parker's study of the enclosure of Cotesback manor provides an excellent illustration of the points we are trying to make.[86] A London merchant, John Quarles, after some difficulties obtained possession of the manor in about 1601-02 and resolved to make a profit. He offered the tenants new leases which they refused on the grounds that the rent was too high. Quarles shortly thereafter renewed his offer which the old tenants again rejected. This was his last effort to preserve the traditional economy. "Determined to rayse the rente of the mannor to some aunswerable proportion to his purchase," he now made preparations for the enclosure of its open fields. After dealing with the freeholders of the area, he tried again to make some arrangement with the old tenants. Not only did they

refuse, they petitioned James I to stop the enclosure. A commission was appointed to investigate the tenants' complaints. The commission was made up of three Leicestershire landowners who had recently enclosed their estates and who were sympathetic to Quarles' position. The commission decided in favor of Quarles who then obtained a royal license to enclose. After enclosure, the tenants had no option but to accept new leases or leave the village. Some remained but had to pay rents about double the pre-enclosure level. Others declined the new terms and left the village altogether. Only by enclosing was Quarles able to get clear title to the land, without which he could not have secured the rent increases. Four years later Quarles was called before a depopulation commission since the number of peasant households on the manor had been cut in half.

Depopulation

A fundamental result of our analysis is that workers are evicted from an estate when it is enclosed.[87] If a landlord wants to increase his profits (raise his rents) then he must reduce the number of peasants on a newly enclosed piece of land. This result does not depend on a conversion from arable to permanent pasture after enclosure. Rather it comes about more generally because an enclosing lord will move back along his total product curve to less labor intensive activities and will necessarily abridge the number of men on his land.

It would be a relatively simple task to test this hypothesis if the requisite data were available, but they are not. This is a controversial subject and the evidence is usually considered to be inconclusive. One line of opinion holds that for the most part it was only the early enclosures which caused depopulation and then only because they converted arable

to pasture. But regional studies by Chambers, Hoskins, Kerridge, and Martin show that the enclosing of an estate, for arable as well as for pasture, abridged labor.[88]

It is often argued that the later enclosures, particularly those accomplished by acts of parliament, actually led to an increase in the demand for labor required to do the hedging, ditching, and fencing of the rearranged fields. Even if enclosures were accompanied by a once over rise in the demand for labor services to set up the closes, such a short-run increase in demand is hardly grounds for arguing that enclosures did not abridge labor. As for the contention that newly introduced techniques of production (particularly root crops) were labor using rather than labor saving, we would argue once again that changes in technology were pretty much independent of enclosures.

A common source of confusion about the effect of enclosure on depopulation, especially in studies of parliamentary enclosures, is the failure to distinguish between two essentially different forms of depopulation. In one case, the issue is what happens to the population on a given piece of land when it is enclosed. In the second case the concern is with the effects of enclosures in general on the agricultural population as a whole. It is case I to which Tawney refers when he observes:

> The evidence of a general trend of opinion during a century and a half--opinion by no means confined to peasants, or to the peasants' champions like Hales, or to idealists like Sir Thomas More, or to the preachers of social righteousness like Latimer and Crowley but shared by Wolsey and Thomas Cromwell in the earlier part of the century, Robert Cecil and Francis Bacon at the end of it (is) to the effect that agrarian changes caused extensive depopulation...[89]

It is case II that is relevant for analyzing the effects of enclosures on

the "supply of labor" in the industrial revolution.[90] In fact, according to our model both of these types of depopulation follow enclosures, but for quite different reasons. On a single piece of property, for a fixed wage equal to the prevailing standard of living, profits are maximized by abridging workers after enclosure. But each act of individual enclosure simultaneously nudges the wage level down. As a result, some displaced tenants will merely move on to other lands. More workers will be hired in previously enclosed villages due to a lower wage, and more peasants will move to unenclosed villages or new lands because the returns there look more attractive with a lower general standard of living. Whether or not enclosures cause a relative decline of agricultural labor as a whole depends entirely on what changes they induce in the overall structure of demand. If rents are used to buy non-agricultural goods and services, then enclosures lead to a net flow of workers out of agriculture.[91]

Expansion of Cultivated Area and Overcrowding

According to our model, enclosure had two readily apparent effects on the distribution of people in the countryside. First, it tended to spread labor more evenly on the land by reducing overcrowding on good land and by enclouraging the use of previously uncultivated areas. All accounts of enclosures note that they led to a great expansion of cultivated land - wastes, commons and other tracts previously excluded from the regular rotation of crops and fallow were plowed up and planted.[92] This spreading of workers was the result of a more efficient allocation of labor based on a decision by the landowners to maximize profits and thereby implicitly to equalize marginal products. It was an essential feature of the process of enclosure itself and did not have to be caused by changes in demand, population, or other external conditions.

The second effect was to be seen in the so far unenclosed towns and villages where some of the dispossessed tenants moved. The overcrowded squatter settlements set up on the borders of these towns were a direct result of enclosures. Two striking examples are provided by studies of Nottinghamshire and Leicestershire. Chambers notes that Nottingham, by its decision not to enclose left itself no choice but to grow within its ancient manorial boundaries, and before the end of the 18th century there were complaints of severe overcrowding. "By turning its face against enclosure, it had condemned itself to a period of unparalleled overcrowding and squalor..."[93] Hoskins makes an almost identical point about Leicestershire:

> There was an inflow into towns and villages probably connected with the contagious enclosure of Leicestershire parishes throughout the century [16th]. The displaced people drifted to towns....or to large open field villages....where labor was still needed in the fields.[94]

A Fall in the Standard of Living

The most provocative result of our model is the theorem that the transition from communal to private property leads to an overall decline in real wages. This means that as the economy moves towards greater specialization and interdependence, as production becomes more efficient and total national income rises, the standard of living of the working population simultaneously declines. Post-enclosure national product goes up (due to increased allocative efficiency) but the greatly enlarged share of property income more than absorbs this increase, so that labor's share contracts at the same time. Actually, many of the popular anti-enclosure writers picked up this kind of theme. Enclosures, they maintained, not only forced peasants

off their traditional estates but also led to their immiseration at the hands of enriched landowners. Economists and historians (Thorold Rogers, Slater, and Tawney prominent among them) emphasized that enclosures constituted a threat to the peasants' standard of living.[95]

The more or less generally accepted data show a severe and sustained decline in real wages from about 1500 to 1700.[96] Although there is some doubt about the magnitude of the decline, no question exists concerning the general tendency.[97]

A Contrasting View: Demographic Pressure

Most economic historians today favor the view that rapid demographic expansion, not enclosures, caused among other things the decline in real wages. "Population pressure has replaced the wicked enclosing and rack-renting landlord as the diabolus ex machina..."[98]

The argument is simple enough. At some point during the first half of the 16th century the population of England began to grow rapidly - some would argue it doubled between about 1500 and 1700.[99] In economic terms this caused an increase in the supply of labor and put an intense downward pressure on real wages. The demographic expansion also led to a shift in the terms of trade in favor of grains and other food crops and against wool and manufactures of all sorts. The overcrowded towns and villages, the large number of vagabonds and landless peasants, in fact most of the unpleasant features of the Tudor economy are now attributed to rapid population growth.[100] It is important to note that the 16th century inflation provides a reasonable explanation of the decline in real wages and the shift in the terms of trade only if it is used together with a rising population.[101]

Demographic expansion undoubtedly influences economic conditions. But upon close examination the arguments that a rapid growth of population was the prime mover behind economic changes in the 16th and early 17th centuries are unsubstantiated, contradictory and scarcely warrant the widespread acceptance they have received. On the other hand, we now know that enclosures were extensive during this period and it would be a serious error to ignore their impact on the economy.[102]

All global estimates of the English population before Gregory King's studies at the end of the 17th century are little more than guesswork. The main documents are records of the poll tax of 1377, the military survey of 1522, the subsidy of 1524-25, an ecclesiastical census in the 1560's for a few counties, and the Liber Cleri in 1603. Our knowledge of the scope of their coverage is subject to such huge errors that estimates of global population based on these documents are practically meaningless except to provide a lower bound.[103] A few parish registers are available after 1540, but they are incomplete, difficult to interpret, and as yet have provided data only for a limited number of local population studies. Thus, estimates of the total population of England before Gregory King's time are particularly unreliable and do not provide sound estimates of population change.[104] As Outhwaite notes:

> We know precious little about the population of the 16th century. It is clear that between the mid-fifteenth century and the end of the 17th century England's population grew considerably, and it is probable that much of this growth was concentrated in the period from about 1480 to about 1630. [Though it has to be pointed out that much of the evidence for this has come from the scrutiny of relative price movements. Thus, there is an enormous danger of explaining price movements by referring to population and accounting for the latter by referring to prices.] But we are not

> yet sure precisely when population began to expand, when it eventually contracted, whether growth proceeded evenly through time, whether it spread uniformly over England, how fast it took place and so on.[105]

Data taken from local studies based on parish records are often used to show a sharp increase in the rate of demographic expansion between 1540 and 1620, but this approach merely demonstrates poor methodology. Since parish records are only available for the period after 1540 (and then very limited in numbers) the most they can show is that the population grew at a slower rate in some places after 1620 than from 1540 to 1620.[106] Besides, these local studies give a decidedly mixed picture of population trends. Some show stable or declining population[107] and even where the overall trend of a region is upward, each locality within the region seems to have experienced noticeably different rates of expansion (or lack of expansion).[108] The implications of the local studies are restricted in any event because of their limited coverage, and at present it is certainly impossible to infer from them that population expansion was exceptionally rapid throughout England in the 16th century.

The lack of solid demographic data has forced economic historians to use indirect evidence to buttress the weak case for a spurt of population growth in the 16th century.[109] Incautious use of such material runs the risk of confusing cause and effect.[110] There is abundant literary evidence from 16th century observers that the population grew swiftly but for the most part these contemporary critics were using as indications of demographic expansion the growing number of vagabonds, penniless farm hands, and burgeoning towns and villages, all of which could have been caused by enclosure. In a similar fashion, economic historians now look to relative price changes

and declining real wages as evidence of population growth. But if demographic expansion instead of enclosures is to explain the decline in real wages and similar phenomena, these pieces of evidence cannot be employed at the same time to make the case for population growth.[111] This may seem too obvious a point to warrant emphasis, but much of the economic history literature concerned with the 16th and 17th centuries falls prey to exactly this kind of circular reasoning.[112] Ramsey's observation on the role of population growth in Tudor England is properly cautious:

> Why did enclosure become an especially live issue in the 16th century? Partly the answer lies in an increase of population, especially urban population. Unfortunately, no reliable figures are available for this and we may be in danger of inventing a plausible hypothesis simply to explain away enclosures, the price-rise, wide-spread vagrancy and unemployment, and other embarrassing phenomena of the Tudor scene.[113]

It is reasonable to think that the English population grew between 1500 and 1700. But it is hard to imagine that the rate of aggregate demographic growth in the 16th century exceeded one half percent a year and it may well have been considerably less.[114] Besides which, technological change must have offset the effects of demographic expansion at least to some extent. Rapid population growth as a destabilizing factor has been overworked and propped up with the very evidence it purports to explain. A rate of demographic expansion significantly greater than the rate of offsetting technological progress could logically account for a decline in real wages, an increase in rents, the taking in of new lands, increased crowding on unenclosed land, an increase in the price of foodstuffs relative to manufactures, the accelerated movement of people off the land into the cities, and the rise of a class of landless laborers. We have demonstrated that enclosures provide an explanation of these phenomena which is

also logically consistent. The point is that we have ample evidence of enclosures, very little direct evidence of increased population growth, and no grounds on which to entirely reject one of these hypotheses in favor of the other.

Enclosures in Economic Development

We have tried to show with the aid of a formal economic model that there was an underlying logic and coherency to the enclosure movement. This was the case despite surface impressions which at times led people to regard it as an historical event of great diversity. The specific propositions yielded by the model are very close to those enunciated by Marx in Part 8 of Capital. Indeed, the whole spirit of the model supports the idea that, polemics aside, Marx's controversial analysis of primitive accumulation may be essentially an accurate and appropriate description of the basic historical tendencies inherent in the enclosure movement.

Following the tradition of earlier classical economists, Marx viewed the process of capital accumulation as the basic driving force of economic development. Capitalist industry created a surplus because the value of output produced by labor with capital was greater than the wage cost of labor alone. In its turn this surplus was largely reinvested by the capitalist, increasing the stock of capital so that more labor power could be combined to provide an even greater surplus. According to Marx, enclosures were an essential precondition to the capitalist development of industry because they, along with merchants' capital, generated the original primitive accumulation which started up the process.

It is likely that enclosures also contributed to maintaining sustained industrial growth. Successful economic development to a large degree hinges

on transferring workers from agriculture to industry in a way which does not eat into capitalist profit margins, thereby choking off the main source of capital accumulation. As labor is drawn away from agriculture, the output of that sector tends to decline and the marginal product of labor rises, pushing up real wage rates (in terms of agricultural goods) throughout the economy. The classical economists avoided this problem by assuming that the agricultural sector contained surplus labor available at a fixed institutional wage, although it has always seemed paradoxical to have profit maximizing behavior along with the ad hoc existence of an arbitrary return to labor.[115] Note that the enclosing of land has the same effects as if there were surplus agricultural labor in the classical sense. Enclosures resulted in the possibility of transferring increased amounts of labor out of agriculture without raising real wages.

There is another issue in economic development which our model may help to illuminate. This is the controversy over the meaning and significance of the distinction between "traditional" and "modern" agriculture. While it would be pointless to catalogue the wide variety of forms encountered in attempts to describe what are sometimes wildly disparate examples of "traditional" agriculture, it is nonetheless striking how many of these descriptions bear a generic resemblance to our model of "feudal" agriculture.

A basic strand running through many descriptions of "traditional" agriculture is the non-commercial, family, or even communal character of the system. This feature is especially vivid in more primitive tribal societies where "ownership" is typically an alien concept altogether, and land in many circumstances has the status of genuine common property.[116]

Even in more "capitalistic" traditional systems there are usually telltale signs of the limited role of land markets, fragmented holdings by extended families, and multi-dimensional landlord-tenant relations with the concomitant non-commercial, sticky rents.[117]

The "stylized facts" about underdeveloped agriculture have the degree of commercialization of a farm varying directly with labor productivity and profitability, but inversely with land productivity.[118] The proxy for "degree of commercialization" is usually taken to be farm size, a variable which is highly correlated with the proportion of hired labor (as opposed to family based labor). While more than one explanation is possible for this set of phenomena, it is certainly consistent with the model set forth in section four of the present paper.

REFERENCES

1. Economic historians have always stressed the influence of these regional differences on the pace and impact of enclosures in England. We can only indicate here a few of the major works which illustrate this diversity and its importance:

   E. Kerridge, The Agricultural Revolution

   J. Thirsk, ed., The Agrarian History of England and Wales, Volume IV: 1500-1649, especially the chapters by Thirsk, A. Everitt, and P. Bowden

   E. C. K. Gonner, Common Field and Inclosure

   H. L. Gray, The English Field Systems.

2. This emphasis on custom was central to most of the studies on medieval society done by these authors. As examples, see:

   P. Vinogradoff, Villainage in England; F. W. Maitland, Domesday and Beyond; H. Pirenne, A Social and Economic History of Medieval Europe; M. Bloch, Feudal Society and French Rural History.

3. See R. H. Tawney, Agrarian Problems of the 16th Century; J. E. T. Rogers, Six Centuries of Work and Wages; P. Mantoux, The Industrial Revolution in the 18th Century, Part 1, Chapter III.

4. It may be argued that in some fundamental sense we do violence to Marx's approach since we make no use of the labor theory of value nor do we distinguish as Marx does between the capitalist farmer (tenant) and the landowner (rentier). Nevertheless it is fair to say that in dealing with the transition from the feudal to the capitalist mode of production neither of these aspects of Marx's analysis are essential. Our notion of surplus and Marx's concept of surplus value are identical in an economy without any capital. Similarly, the distribution of the surplus between rentier and capitalist tenant may have important implications for the development of capitalist farming but not for the transition between modes of production.

5. We refer here to Part VIII in Volume 1 of Capital. The following paragraph in the text is based, for the most part, on what we believe to be the essence of Marx's analysis of enclosures. Although it is possible to footnote every sentence of this paragraph, it would not make our interpretation any more convincing. The reader must decide for himself the validity of our position.

6. See W. E. Tate, The English Village Community, and a series of earlier articles dealing with enclosures by acts of parliament:

"Members of Parliament and their Personal Relations to Enclosures"; "Members of Parliament and the Proceedings upon Enclosure Bills"; "Opposition to Parliamentary Enclosure in Eighteenth Century England." See also G. E. Mingay, Enclosures and the Small Farmer During the Industrial Revolution. The book in question by the Hammonds' is J. and B. Hammond, The Village Laborer.

7. A. E. Levitt, Studies in Manorial History, 42.

8. This comes out most clearly in the works of R. H. Hilton (see, for example, The Decline of Serfdom and A Medieval Society). E. A. Kosminsky in Studies in the Agrarian History of England also makes this point.

9. See E. Miller, "England in the Twelfth and Thirteenth Centuries"; M. M. Postan, "The Chronology of Labour Services" (and others of his writings); G. Duby, Rural Society; J. A. Raftis, Ramsey Abbey.

10. Bloch, French Rural, 70. Although Bloch refers to France, his observation would appear to hold for England as well.

11. Ibid.

12. Hilton, "Medieval Agrarian History", 156. F. Pollock and F. W. Maitland, History of English Law, Volume I, 361-379, make a similar point.

13. For a concise statement of this with regard to non-western traditional societies see M. Nash, "The Organization of Economic Life", 5.

14. As Bloch observed:

> The segneurie was not a simple economic enterprise by which profits accumulated in a strong man's hands. It was also a unit of authority. The powers of the chief were not confined, as in capitalist enterprises, to work done on his business premises but affected a man's whole life and acted concurrently with the power of the state and the family. (Bloch, "The Rise of Dependent Cultivation", 236)

H. Pirenne, Economic and Social History of Medieval Europe, 63, makes a similar observation.

15. Hilton, "Social Structure of Rural Warwickshire", 14-18, among others, provides a list of services owed by a peasant to his lord. See also Duby, Rural Economy, 197-259 and passim; and Miller, The

Bishopric, 114-116.

Bloch makes an interesting point concerning the etymology of the word for rent. In medieval France, the ordinary name for rents was "customs" (Bloch, Feudal, 248).

16. At one time it was thought that services were gradually commuted throughout the middle ages so that by the late medieval period labor services were an anachronism. Postan ("The Chronology of Labour Services") and others have argued that the chronology was not so simple. At certain times a lord might try to commute services to money payments; on other occasions he might attempt to recommute from cash payments to services. It seems that even peasants did not always favor commutation. (A. E. Bland, P. A. Brown, and R. H. Tawney, English Economic History, 85). It is therefore reasonable to assume that throughout the period under consideration labor services formed a part of the obligations owed by a tenant to his manorial lord.

17. Duby, Rural Economy, 213.

18. Vinogradoff, Villainage, 365-367 and passim.

19. Ibid, 174.

20. Ibid, 175-175.

21. This statement is not meant to imply that landlords were unconcerned with the income they received from their estates. There is evidence that during the 13th and early 14th centuries manorial lords began a somewhat more systematic exploitation of their estates: they tightened administrative control, attempted to extract higher payments from their tenants, and brought under personal control land that had recently been farmed out. (See among others E. Miller, "England in the Twelfth and Thirteenth Centuries"; J. Titow, Rural Society, 64-96; Duby, Rural Economy, 258-259; Postan, "Medieval Agrarian Society in its Prime: England", 581-584) Various factors have been identified as causes of this change in landlord behavior: population growth, expansion of trade and commodity production, the first intimations of a capitalist spirit, etc. Whatever the causes were, the demographic, economic, and political crises of the late 14th and 15th centuries caused a major reversal of these trends. Trade declined, estates were again farmed for a fixed return, feudal obligations were commuted to fixed cash payments, and many villeins slowly gained rights by the copy of the court rolls to the land they worked. The decay of the manorial economy was thus associated with a greater reliance on custom to determine who held land and with

a greater rigidity in the value of payments. (This is noted by Duby, Rural Economy, 327-331; Raftis, Ramsey Abbey, 292-295) In spite of these long term fluctuations in economic activity, historians familiar with manorial accounts have noted that they were amazingly uniform over extended periods. This suggests that such receipts were not economic rents in the modern sense. (F. M. Page, Crowland Abbey, 194; Levitt, Studies in Manorial History, passim.) Although it is difficult to determine how much of the stability was only apparent (the result of poor accounting techniques) and how much was real, it still provides some grounds to presume that rents were not profit maximizing.

22. Even Kosminsky, who devoted much effort to discover capitalist relations within the confines of the feudal mode of production, was only willing to argue that these relations were present in embryonic form. (Studies, 228) The dominating forces were those associated with feudalism.

23. Duby, Rural Economy, 280-281. See also Hilton's introduction to Kosminsky, Studies, xx.

24. D. Griggs, The Agricultural Revolution of South Lincolnshire, 37.

25. Bloch, French Rural, 72. Few have said it so well as Bloch but many have made similar observations - see among others, Hilton, A Medieval Society, 24-25 and passim. Tawney, of course, argues eloquently for this interpretation.

26. On labor markets see Postan, "Medieval Society in Its Prime: England", 622-624 and The Famulus: The Estate Labourer. Hilton, Economic Development of Some Leicestershire Estates, 69-78, 138-148 provides a good description of labor supply on demesne lands.

27. A. Everitt, "Farm Labourers", in J. Thirsk, ed., Agrarian History, 400.

28. Pollock and Maitland, History of English Law, 346. See P. Hymans, "The Origins of a Peasant Land Market in Britain," for a criticism of Postan's argument that an extensive peasant land market existed in England by the late 13th century. (For Postan's position see his introduction to Postan and C. N. L. Brooke, eds., Carte Nativorum). As Page observes for Crowland Abbey, some leasing of land by peasants occurred in the 13th and 14th centuries but there is no evidence of sales. The object of exchanges of land among tenants was to achieve more convenient arrangements of strips in the open fields. (Page, Crowland Abbey, 114-115).

29. Simpson, History of Land Law, 44.

30. Pollock and Maitland, History of English Law, Volume I, 2-37; C. B. Macpherson, Democratic Theory: Essays in Retrieval, Essay 4, passim.

31. Simpson, History of Land Law, 45-76.

32. R. B. Smith, Land and Politics in the England of Henry VIII, 43.

33. The lord was sometimes in a superior position and in some cases he was capable of overriding the rights of the peasant community. (See Bloch, "The Rise of Dependent Cultivation", 235-236.) But this was less common than might be expected. This does not mean that obligations never changed, merely that they were not arbitrarily or frequently adjusted. As Titow says: "Thirteenth century villeinage was neither arbitrary nor unpredictable;even though it was deprived of the protection of the royal courts, the lord knew what he was entitled to and the peasants knew what to expect, since such matters were governed by the Custom of the Manor which was binding on landlords and peasants alike." (Titow, Rural Society, 58).

34. Macpherson, Democratic Theory, passim. As Hilton points out, it was against custom that lords had to fight when they sought to increase rents or otherwise change the nature of tenurial relations. (Hilton, "Medieval Agrarian History", 156)

35. C. S. and C. S. Orwin, The Open Fields, 48.

36. Hilton, "Medieval Agrarian History," 181.

37. Homans, English Villagers, 53, 56; Orwins, Open Fields, 49-58.

38. Orwins, Open Fields, passim for the best description of the system. (See also introduction by J. Thirsk to the second edition).

39. Pollock and Maitland, History of English Law, Volume I, 624.

40. H. Cam, "Community of the Vill," 258-261; Hilton, A Medieval Society, 153-154; Vinogradoff, The Growth of The Manor, esp. 318-326.

41. Documents relating to certain Yorkshire villages in the thirteenth century indicate that

> ... individual strips of ploughland were held by owners in each of the fields in an order of distribution so

> nearly identical as to suggest a group of farmers had cooperated in breaking the sod... and had alloted a strip of ploughland, the work of a day, to each farmer in town. (W. O. Ault, Open Field Farming and the Village Community, 6).

The origins of the common field system of agriculture in England is at present a controversial topic. Joan Thirsk opened the controversy with her article "The Common Fields" in which she argued that the twelfth and first half of the thirteenth centuries were crucial ones for the development of the first common field systems in England. Titow ("Medieval England and the Open Field System"), and G. C. Homans ("The Explanation of English Regional Differences"), countered that the evidence is mixed, unreliable and if properly interpreted shows the existence of open fields certainly in the 13th century and in many areas centuries earlier. In part, the debate is one of definition. For Thirsk, common field agriculture has four essential elements: fields divided into strips; common grazing of meadows and arable after harvest and when fallow; existence of common pasturage and waste areas open to all cultivators; activities regulated by assembly of cultivators. Both Titow and Homans for different reasons question her definition and in consequence her argument. Although the issues of the controversy lie outside the bounds of our analysis, we would argue that communal rather than private regulation of property was prevalent in the so-called champion areas of England from the twelfth through much of the 15th century.

42. We are well aware that Kosminsky, Hilton, and others have shown that by the 14th century land was unequally distributed in many rural communities. Similarly, the Orwins note that by 1635 in Laxton the land was unequally divided among the open field villagers; Hoskins makes the same observation for Wigston Magna in the 16th century. (W. G. Hoskins, The Midland Peasant)

43. Bloch, French Rural, 45-48; Maitland, Domesday, 337; Pirenne, Economic and Social History, 64-65.

44. Vinogradoff, Villainage, 236-238.

45. Bloch, Feudal Society, 263. See also Duby, Rural Economy, 121; Bloch, French Rural, 86, and "The Rise of Dependent Cultivation", 260; Vinogradoff, Villainage, 157-158.

46. Raftis, Tenure, passim; W. G. Hoskins, Provincial England, 193; Titow, "Some Differences Between Manors", passim.

47. On this see H. S. Bennett, Six Medieval Men and Women, 163.

48. Pollock and Maitland, History of English Law, 376.

49. Hoskins (Provincial England, 193) makes this point for a later period. See also Raftis, Tenure, 180-181; Titow, "Some Differences Between Manors," 44-45.

50. P. Ramsey in Tudor Economic Problems, 32-33 notes that the squirearchy was responsible in Leicestershire for nearly sixty percent of enclosures between 1485-1550 and seventy percent between 1551-1607. In Lost Villages, 189-196, M. Beresford makes a similar point. On the other hand, the merchant-landowner must have exerted a powerful force for change in the countryside. His attitudes towards property were influenced by his business experience and he was less constrained by the customs of the manor than was the feudal lord. (H. J. Habbakuk, "English Landownership: 1680-1740", gives some indirect evidence for this phenomenon.)

51. Hilton, "Medieval Agrarian History", 192.

52. The works of J. D. Chambers, Hoskins, Martin, and others all confirm this notion.

> A considerable degree of inequality in the distribution of land had already come about by the enclosure date in most parishes.... even some 'open' ones like Tysoe and Napton possessed by this time big estates created in an earlier period by some great landowner. (Martin, "The Parliamentary Enclosure Movement and Rural Society in Warwickshire," 27).

53. Hoskins, Midland Peasant, 249; Kerridge, Agricultural Revolution, 24; Mingay, Landed Society, 99, 180-181, 184, 186; Lavrovsky, Ogorazhivanye, 22-24; Jones, introduction to Agriculture and Economic Growth, 13.

54. See Tate, Village Community, passim.

55. Gonner, Common Land, 153.

56. F. J. Fisher, "Commercial Trends and Policy in 16th Century England"; P. J. Bowden, The Wool Trade, Chapter 1; Ramsay, Tudor Economic Problems, 24-25; Tawney, The Agrarian Problem, 195-197.

57. "By enclosing his arable land and converting it to pasture, a farmer was able to cut down his labour costs by changing from a

crop using a comparatively large amount of labour to one using little". (Bowden, The Wool Trade, 5)

58. R. B. Smith, Land and Politics in the England of Henry VIII, 19; Kerridge, "Agriculture 1500-1793", 54 and passim; Chambers, Nottinghamshire in the 18th Century, 137-172.

59. Fitzherbert, Book of Husbandry, 77 and passim; T. Tusser, Five Hundred Pointes of Good Husbandrie, 140-146.

60. Thirsk, Tudor Enclosures, 11.

61. See especially I. S. Leadam, "Inquisitions of 1517" and "Inquisitions of 1517 - Enclosures and Evictions".

62. Price data on wool are scanty. The best series is that prepared by Bowden and they are open to criticism. (See J. Wright, "A Note on Mr. Bowden's Index"). S. Pollard ("A Second Note to Mr. Bowden's Wool Prices") makes some of the same observations which we do about trends in the wool and wheat series. Bowden uses his series to argue that, although both wheat and wool prices rose in the first half of the 16th century, there were only two periods in which the price of wheat was high relative to the price of wool and only after 1552 did relative prices move in favor of wheat. (Bowden, "Movement in Wool Prices", 123. For an extension of this series back to 1450. and for the series on grain see appendix by Bowden in Thirsk, ed., Agrarian History).

63. A regression was run of the form $Pw/Pg = a + bt$ for the 101 years from 1450 to 1550 where Pw is the price of wool, Pg is the price of grain, and t is time. The coefficient b was negative with a t-statistic greater than three. The data were based on Tables I and V in Bowden's statistical appendix in Thirsk, ed., Agrarian History.

64. Tawney and Power (eds., Tudor Economic Documents, 178-185) discovered one person who argued that wool production declined in England between 1355 and 1547.

65. This interpretation gains some support from studies of the wool trade in the 15th and early 16th centuries. From all accounts, by the middle of the 15th century trade in woolens was well organized with established outlets for English products on the continent. Aside from temporary gluts, these great international markets in Europe could absorb almost unlimited quantities of English woolens. For information on the wool trade see, M. M. Postan and E. Power, ed., Studies in English Trade in the 15th

Century; E. M. Carus-Wilson, Medieval Merchant Venturers, and "The Woollen Industry before 1550"; H. Vanderwee, The Growth of the Antwerp Market; Bowden, The Wool Trade.

66. See among others H. L. Gray, English Field Systems, 109.

67. Hoskins, Provincial England, 153.

68. Orwins, Open Fields, 161; M. A. Haviden, "Agricultural Progress in Open Field Oxfordshire", 156-159; Kerridge, Agricultural Revolution, 19 and passim; Martin, "Parliamentary Enclosures and Society in Rural Warwickshire". As an example:

> "In 1677 the tenantry of Wylye agreed to restrict their pea hitchings to one-third of the West End Common fields each year ... to permit individual farmers to grow other fallow crops as they pleased. By 1716 at the latest clover was being sown in the common fields of Chalke ..."
> (Kerridge, "Agriculture, 1500-1793", 57)

69. Griggs, Agricultural Revolution in South Lincolnshire, 47.

70. Ibid, 54.

71. A few economic historians have noted that there was a savings in transit time which followed from making farms more compact. But in an age before mechanization, the time spent in transit between strips of land in the same village had to be an insignificant part of the time it took to work a strip. Other arguments for the advantages of compactness based on economies of scale seem similarly unconvincing in a context of non-mechanized agriculture.

72. Chambers and Mingay, The Agricultural Revolution, 104.

73. R. B. Outhwaite, Inflation in Tudor and Early Stuart England.

74. Stone, Causes of the English Revolution, 68; also W.K. Jordan, The Growth of Philanthropy in England, 61.

75. These observations are a rationalization for changes in economic behaviour which seem to gain a foothold at roughly the same time that enclosures began to bulk large in England.

76. Rent data for the 16th and early 17th century are scarce. Kerridge's index, compiled from surveys of the Herbert estates in the Chalk country of Wiltshire, is probably the best series

we have. (Kerridge, "The Movement of Rents") The data do not show a steady rise in the real value of rents when compared to the indices of grain prices or the Phelps Brown price index unless the years 1510-1519 are included. The level of real rents in 1630-9 was no higher than in 1530-9 (see also Stone, Crisis of the Aristocracy, 327). However, there is no question that throughout this period rents rose dramatically relative to wages. Money rents increased fourfold from 1530-39 to 1630-39, whereas money wages more than doubled (Kerridge, "The Movement of Rents", Phelps Brown and Hopkins, "Seven Centuries of Building Wages" and "Seven Centuries of the Prices of Consumables").

Over the same period, the terms of trade moved strongly in favor of agriculture and against industry (Phelps Brown and Hopkins, "Wage-Rates and Prices", 298), a result predicted by our model. We have no estimate of the real value of aggregate rents for the 18th century, either in absolute terms or relative to other aggregates.

77. Stone, Crisis of the Aristocracy, 323.

John Mortimer, writing in 1707 argued:

> "I shall propose two things that are matters of fact, that, I think, are sufficient to prove the advantages of enclosures; which is, first, the great quantities of ground daily enclosed; and secondly, the increase of rent that is everywhere made by those that do enclose their lands." (Quoted in Gonner, Common Land and Inclosure, 303)

78. Martin, "Parliamentary Enclosures and Society in Rural Warwickshire", 29; Chambers and Mingay, The Agricultural Revolution, 84.

79. For the most part, we are concerned with copyhold tenure. There were at least four ways in which a tenant could hold his estate according to the copy of the court-roll --- by inheritance with a fixed entry fine, by inheritance with an arbitrable entry fine, and for life or lives with either a fixed or an arbitrable entry fine. (Among others on this point see Stone, Crisis of the Aristocracy, 307). Each one had different legal implications and were susceptible to different forms of rent adjustment. In the text, we treat copyholders as a group whose rights to the land and obligations to the lord were determined by custom.

80. C. M. Gray, Equity, Chapter 1.

81. Lords were not always able to bring about even this change in obligations. See Stone, Crisis of the Aristocracy, 308; Hoskins, The Midland Peasant, 104-106; R. B. Smith, Economics and Politics in the Reign of Henry VIII, 80.

82. Stone, Crisis of the Aristocracy, 314-322. Funds could not be borrowed to finance these types of investments.

83. Habbakuk, "English Landownership, 1680-1740", 15.

84. Ibid.

85. Chambers, Nottinghamshire in the 18th Century, 137-172; Habbakuk, "English Landownership, 1680-1740", 16.

86. L. A. Parker, "The Agrarian Revolution at Cotesbach". (Also cited in J. Thirsk, "Enclosing and Engrossing"). Many examples similar to Parker's study can be found in the literature but none can match his for completeness or detail. See Hilton, "Medieval Agrarian History", 194; R. B. Smith, Land and Politics in the England of Henry VIII, 13; Chambers, Nottinghamshire in the 18th Century, 145-166, and passim; Martin, "The Parliamentary Enclosure Movement and Society in Rural Warwickshire"; Hoskins, The Midland Peasant, 241-260 and passim; Tawney and Power, eds., Tudor Economic Documents, Volume III. The list of grievances presented by Ket and his associates is a veritable case study in what enclosures actually entailed: (1) stop rent increases; (2) keep commons open to freeholders and copyholders; (3) keep down entry fines and halt the erosion of copyhold to modern leasehold. (See Bland, Brown, and Tawney, eds., English Economic History, 247-251).

    M. Spufford, A Cambridgeshire Community, 44-48 tells a similar tale but interprets it differently.

87. In our model, some individuals do the enclosing and capture higher rents, while others are forced off the land. Formally, it is immaterial who plays which role. In the vast majority of cases, as we would expect, it was the lord who did the enclosing and the traditional tenant who was evicted.

    In a major comprehensive study on the distribution of enclosed land, Lavrovsky shows that during the parliamentary enclosures

less than seven percent of enclosed land went to peasants holding a total of 25 acres of land or less. In the earlier enclosures, not regulated by parliamentary acts, the allotment was presumably even more disproportionate. (V. M. Lavrovsky, Ogorazhivanye, 174-174) See also Hoskins, The Midland Peasant, 165, 249-251.

If a tenant was able to demonstrate to the satisfaction of a court that he had good title to land (if his family had worked it for time out of mind), his tenure was secure although this didn't necessarily mean that he ended up "owning" it. If he was unable to do this, he was at the mercy of the enclosing lord. For the most part, good title to the land was difficult to establish for a copyholder and insecurity was widespread where enclosures were extensive. (Ramsey, Tudor Economic Problems, 33-34).

88. Chambers, Nottinghamshire in the 18th Century, 178-194 and passim; Hoskins, The Midland Peasant, 217-260; Martin, "Parliamentary Enclosures and Society in Rural Warwickshire". Kerridge brings this out in many places: Agrarian Problems of the 16th Century; "The Revolts in Wiltshire Against Charles I"; "Agriculture 1500-1793", 50. Leadam, "The Inquisition of 1517 - Enclosures and Evictions", argues that eviction accompanied enclosures for pasture as well as those for arable. (Gay, "The Inquisition in 1517 and The Domesday of Enclosure", 247 disagrees but he provides no evidence to the contrary).

These studies do not provide conclusive evidence. They treat restricted areas and consider only a small, although unknown, portion of the total number of enclosures which occurred. In spite of these drawbacks, on balance they support the position that enclosures displaced tenants.

89. Tawney, Agrarian Problem in the 16th Century, 265.

90. Chambers, "Enclosure and the Labour Supply in the Industrial Revolution".

91. In the sense that for any given wage being offered in the non-agricultural sector, more workers will be drawn out of agriculture if the standard of living is lower, enclosures might be said to increase the "supply of labor" to the non-agricultural sector were we forced to use that kind of partial equilibrium language. Unfortunately, the concept of a supply of labor schedule is meaningless in the kind of general equilibrium context needed to analyze the effects of enclosures.

92. Mingay, Landed Society in the 18th Century, 179; Chambers, Nottinghamshire in the 18th Century, 181.

93. Chambers, "Population Change in a Provincial Town", 99.

94. Hoskins, Midland Peasant, 212. See also Tawney, Agrarian Problems of the 16th Century, 277; Martin, "Parliamentary Enclosures and Society in Rural Warwickshire", 23.

95. Tawney, The Agrarian Problem of the 16th Century, 279-280; Rogers, Work and Wages, 488-490; Slater, English Peasantry, 117-128. Rogers, in fact, was the first economist to provide statistical evidence of a continuous decline in real wages between 1500 and 1650.

96. Phelps Brown and Hopkins, "Seven Centuries of Building Wages" and "Seven Centuries of the Prices of Consumables". The Phelps Brown-Hopkins data are, for the most part, a reworking of the statistics compiled by Rogers.

97. J. U. Nef in,"Prices and Industrial Capitalism in England and France", took issue with the data of Rogers. He argued that the series exaggerated the cost of subsistence, and underestimated the rise in money wages. In addition, Rogers failed to recognize that part of a workman's pay was often in the form of meals which shifted the burden of rising food prices onto employers. Finally, workmen probably had gardens of their own or maintained ties with the countryside from which they obtained some of their necessary supplies. Even though Phelps Brown and Hopkins took into account some of these objections, their series still depicted a drastic decline in real wages.

98. Stone, introduction to Tawney, The Agrarian Problem of the 16th Century, XI-XII.

99. Stone, The Causes of the English Revolution, 67 and "Social Mobility in England, 1500-1700", 40.

100. Stone has made the most explicit statement of this position:

> "... Today we are beginning to be aware of the critical importance of demographic growth as a destabilizing factor. It was demographic growth which stimulated the change to a market economy by increasing the number of townspeople dependent on the countryside for food supplies. It was relentless demographic growth which multiplied the number of villagers until the pressure on the land became acute. It was this rather than the enclosing activities of monopolistic landlords which caused the struggle over the common lands and the encroachment on the

> waste. It was also responsible for the rise of a landless labourer class, of a semi-employed squatter population eking out a living in cabins on the wastes and heaths, and of a small but conspicuous body of unemployed vagrants. Demographic growth outpacing agricultural output pushed up the prices of food and fuel far beyond those for industrial goods or wages, and so brought about the impoverishment of the landless labouring classes. (Stone, introduction to Tawney, The Agrarian Problem of the 16th Century, XI)

101. On this see Nef, "Prices and Industrial Capitalism in England and France" and E. J. Hamilton, "American Treasure and the Rise of Capitalism".

For an excellent summary of these issues see Outhwaite, Inflation in Tudor and Early Stuart England, 37-47.

102. The work of Gonner (Common Land and Inclosure), Kerridge (especially "The Returns of the Inquisitions of Depopulation"), and others has shown that the official records of enclosures on which Gay based his estimates seriously understated the actual amount of land enclosed. Besides, what is relevant for the purposes of our analysis is not the number of acres "legally enclosed" but the amount of land changing from largely communal to primarily private regulation. From this point of view, a very large amount of enclosing was done in the 16th and 17th centuries, although only a fraction of it would show up in official statistics.

103. I. Blanchard, "Population Change, Enclosure, and the Economy".

104. It is well known that early demographic data for France are superior to those for England. Yet Pierre Goubert argues that:

> ... all the figures which have been put forward in various works on the population of France in 1500, 1600 or 1640, are pure inventions or at best bold extrapolations; not one of them merits acceptance, and we must similarly reject any calculations made on the basis of these conceptual figures, and in particular the estimation of any 'rate of demographic growth' for the country between 1500 and 1700 ... (Pierre Goubert, "Recent Theories and Research in French Population", 458)

His general comment on French demographic experience probably has some relevance for England as well:

> We are coming more and more to the belief, and on good grounds, that decisive changes did not occur in France before the second half, and maybe not before the end, of the eighteenth century. (Ibid, 473)

105. Outhwaite, Inflation in Tudor and Early Stuart England, 42.

106. See, for example, Hoskins, Provincial England, 194; C. C. Taylor, "Population Studies in Wiltshire"; E. A. Wrigley, Population and History, 78.

Similarly, family reconstitution studies, especially of the peerage in England, indicate a rise in the population after 1540. See T. H. Hollingsworth, "The Demography of the British Peerage".

107. See, for example, W. G. Howson, "Plague, Poverty, and Population".

108. C. T. Smith, "Population", 141. R. B. Smith is unwilling to make any general statement about population growth in the West Riding of Yorkshire in the 16th Century - the figures are subject to severe shortrun fluctuations which make observations about trends meaningless. (R. B. Smith, Land and Politics in the England of Henry VIII, 30-38). Hoskins in Provincial England, 185-195, argues that the population of Wigston Magna expanded by almost sixty percent between 1563 and 1603, but he notes that the increase is due in substantial part to immigration from the surrounding areas by men seeking land. He figures that the natural rate of population growth rose but he is unable to say by how much.

109. Blanchard, "Population Change, Enclosure, and the Economy", 428-429.

110. On this see Habbakuk, "The Economic History of Modern Britain", 148-149.

111. This is, of course, Outhwaite's point in the quote included in the text.

112. The literature on enclosures is full of examples of this type of circular reasoning. Thirsk cites Kerridge's article on rent increases as evidence for population growth. But she begins her analysis by stating that population growth (rather than enclosures) explains the rent increases. (Thirsk, "Enclosing and Engrossing", 204-205) Bowden makes a similar error -- he rightly states that population estimates for the period 1500-1640 are poor, then notes

that evidence of mounting land hunger, increasing poverty, and diverging price movements leave no doubt that the population rose. But he goes on to argue that a growing surplus of labor arising from population pressure (rather than enclosures) was responsible for increasing poverty. (Bowden, "Agricultural Prices", 598-601).

113. Ramsey, Tudor Economic Problems, 22.

114. At this point it is worth considering the standard notion that population more or less doubled between 1500 and 1700. Suppose, for the sake of argument, that this doubling occurred in such a way that the population grew twice as fast during the sixteenth as it did during the seventeenth century. Even with this extreme assumption, the rate of population growth turns out to be .46% per year in the sixteenth century. An evenly growing population would have to expand at an annual rate of .35%.

115. See W. A. Lewis, "Economic Development" and "Unlimited Labour".

116. There are many references that could be cited here. An especially useful account for West Africa is given in C. J. Raynor, Land Tenure.

117. As with the previous footnote, a great many references are possible. There is a very interesting study of 19th century Irish land tenure which might be consulted (B. L. Solow, Land Question, especially chapters 1, 2). For Greece, a good description is given in K. Thompson, Farm Fragmentation. A number of the same points we are trying to make have been expanded by R. S. Eckaus in"Market Structure."

118. There is abundant literary evidence from case studies in economic development, but it is difficult to know what to make of it. The most comprehensive micro studies of farm management in an underdeveloped country have been undertaken in India (Ministry of Food and Agriculture, Studies in the Economics of Farm Management, 17 volumes, Delhi, 1957-62). A number of articles have been based on this study, which in scope and refinement is generally considered to have surpassed all previous field studies of the economics of peasant agriculture. For empirical evidence of the "stylized facts" drawn from the farm management studies, see M. Paglin,"Surplus Agricultural Labor"(especially tables 1, 3, 4); C. H. Rao,"Farm Size;"R. L. Bennet, Comment (especially table 1).

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